NIETZ 60W Single Output LED Power Supply CLG-60 series

Features :

- Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency up to 89%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- IP67 design for indoor or outdoor installations
- UL1310 Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

SPECIFICATION

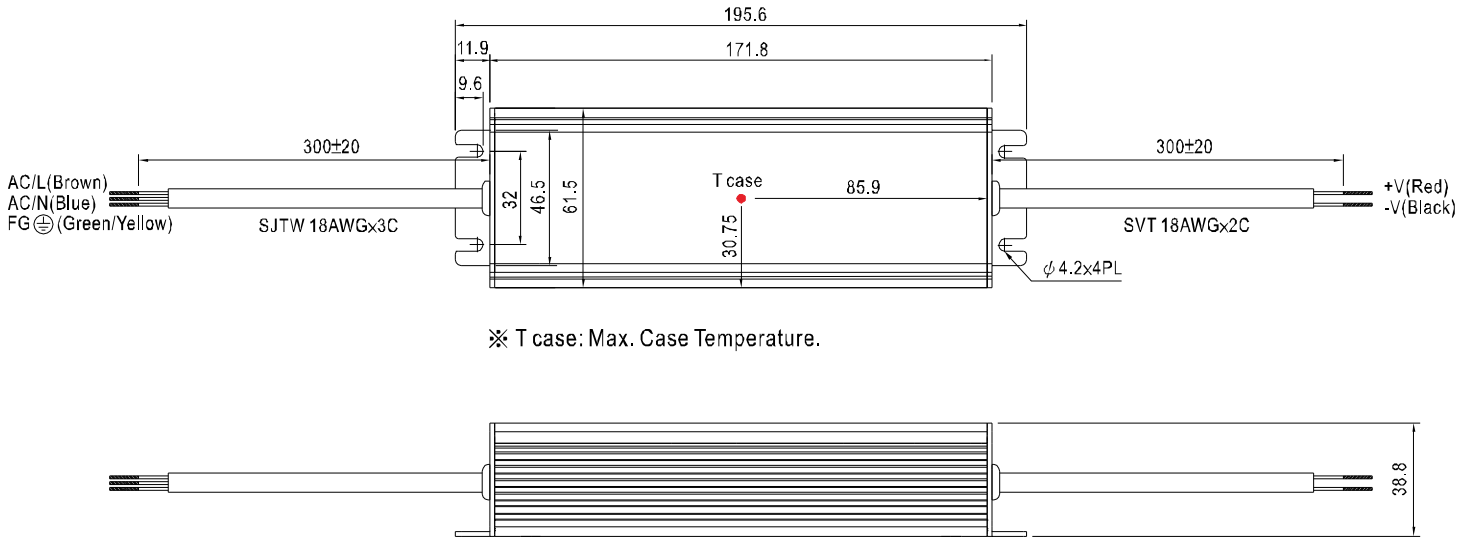
MODEL		CLG-60-12	CLG-60-15	CLG-60-20	CLG-60-24	CLG-60-27	CLG-60-36	CLG-60-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.5	8.4 ~ 12V	10.5 ~ 15V	14 ~ 20V	16.8 ~ 24V	18.9 ~ 27V	25.2 ~ 36V	33.6 ~ 48V
	RATED CURRENT	5A	4A	3A	2.5A	2.3A	1.7A	1.3A
	CURRENT RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A
	RATED POWER	60W	60W	60W	60W	62.1W	61.2W	62.4W
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.7Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p
	VOLTAGE ADJ. RANGE	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V
		Fixed can be modified between the range above						
	CURRENT ADJ. RANGE	Fixed. Can be modified between 3% ~ -25% rated output current						
	VOLTAGE TOLERANCE Note.3	±10%						
	LINE REGULATION	±3.0%						
	LOAD REGULATION	±5.0%						
	SETUP TIME	3000ms / 230VAC 5000ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.4	90 ~ 295VAC 127 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.94/115VAC, PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	85%	86%	87.5%	87%	88%	89%	89%
	AC CURRENT (Typ.)	0.8A/115VAC 0.4A/230VAC 0.3A/277VAC						
	INRUSH CURRENT(max.)	40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 110%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	23 ~ 26V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER TEMPERATURE	12V: 90℃ ±10℃ (TSW1) detect on heatsink of power transistor						
		15V ~ 48V: 85℃ ±10℃ (TSW1) detect on heatsink of power transistor						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL879, UL8750, UL1310 Class 2, TUV EN61347-1, EN61347-2-13 independent, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13(option, 20~27only), IP67 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	495.7Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	195.6*61.5*38.8mm (L*W*H)						
	PACKING	0.86Kg; 16pcs/14.8Kg/0.54CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Constant current operation region is within 70% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
6. The power supply is considered as a component that will be operated in combination with final equipment.
7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

■ Mechanical Specification

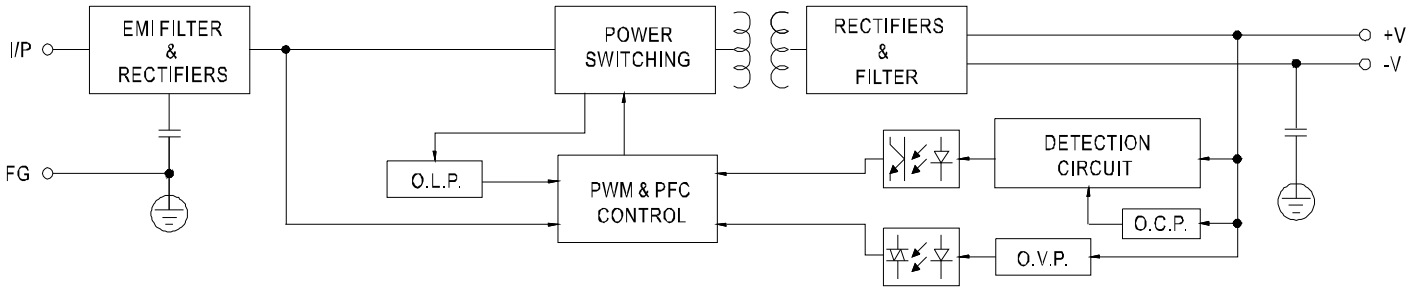
Case No. 957A Unit:mm



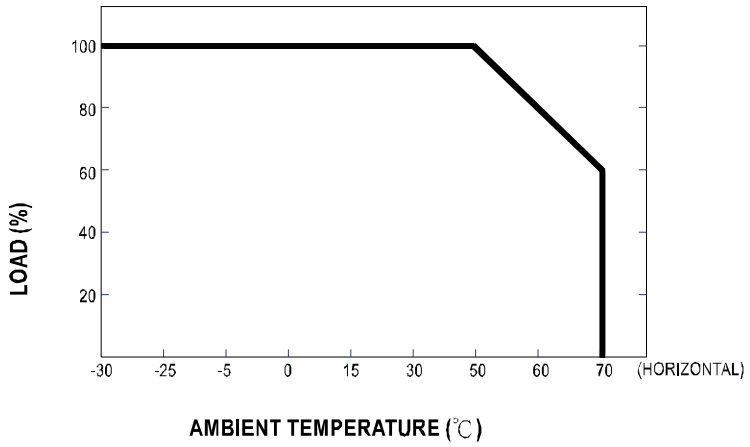
※ T case: Max. Case Temperature.

■ Block Diagram

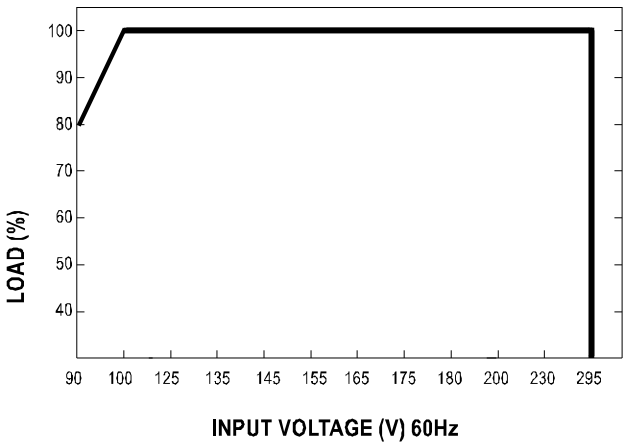
fosc : 90KHz(115VAC)
120KHz(230VAC)



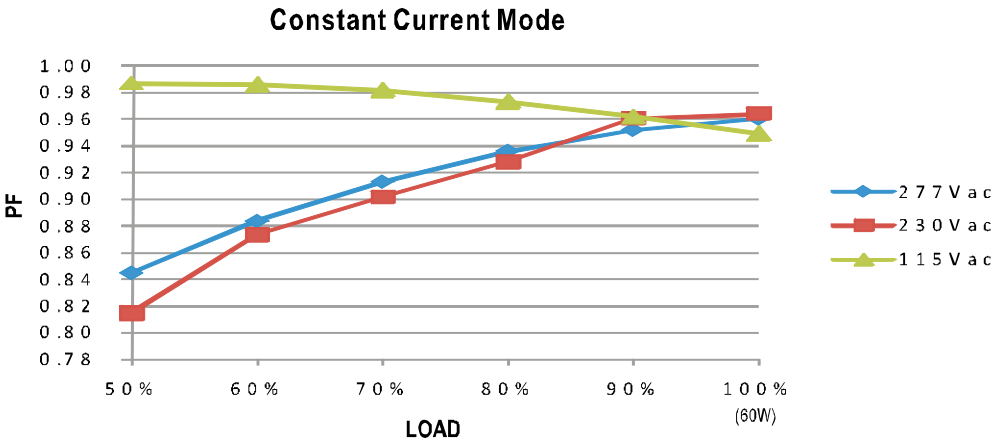
■ Derating Curve



■ Static Characteristics

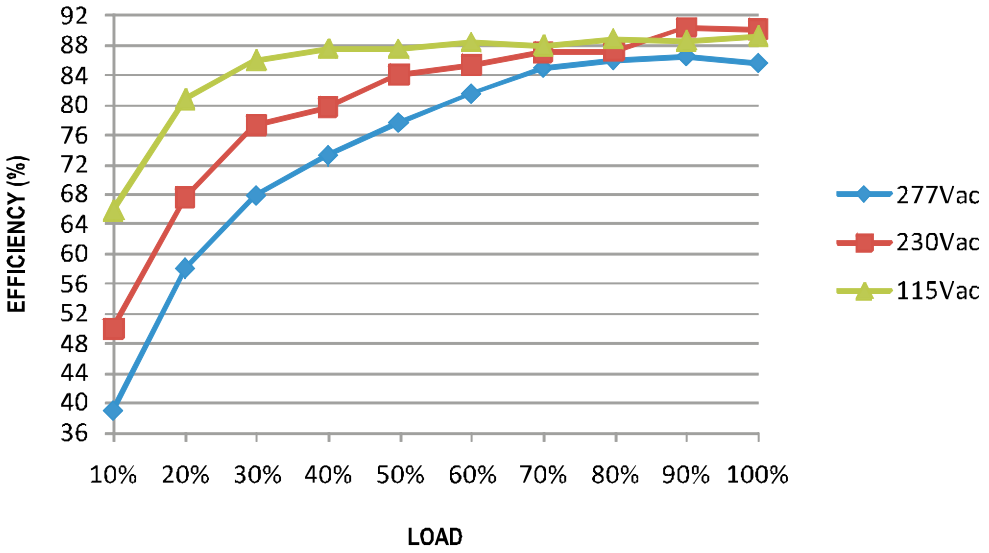


■ Power Factor Characteristic



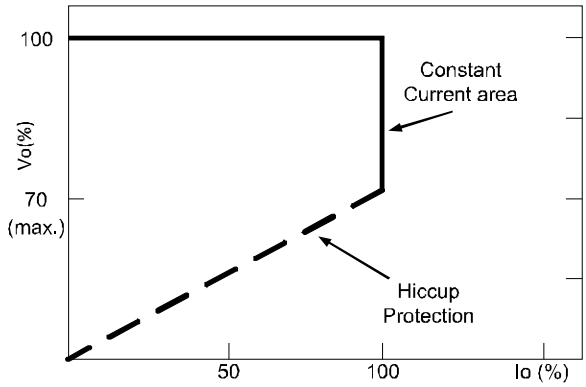
■ EFFICIENCY vs LOAD (48V Model)

CLG-60 series possess superior working efficiency that up to 89% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve

NIETZ 0W Single Output Switching Power Supply CLG-100 series

■ Features :

- Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency up to 90%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- IP67 design for indoor or outdoor installations
- UL1310 Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

SPECIFICATION

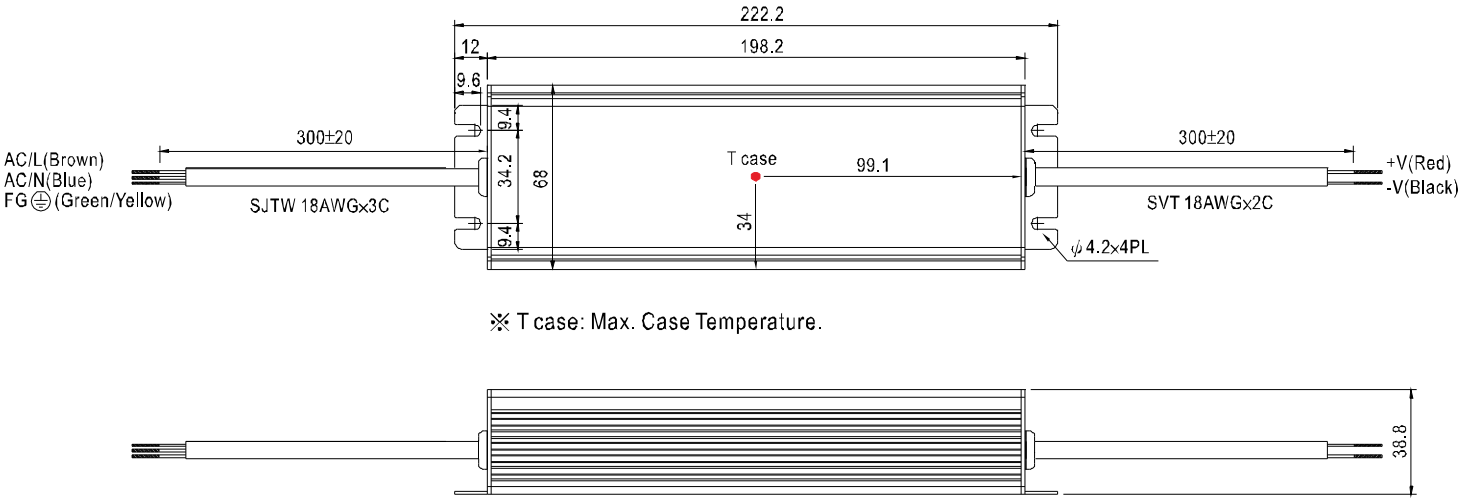
MODEL		CLG-100-12	CLG-100-15	CLG-100-20	CLG-100-24	CLG-100-27	CLG-100-36	CLG-100-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.7	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V
	RATED CURRENT Note.5	5A	5A	4.8A	4A	3.55A	2.65A	2A
	RATED POWER Note.5	60W	75W	96W	96W	95.85W	95.4W	96W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	Fixed. Can be modified between 0% ~ -15% rated output voltage						
	CURRENT ADJ. RANGE	Fixed. Can be modified between 3% ~ -25% rated output current						
	VOLTAGE TOLERANCE Note.3	±3.0%	±3.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
	LINE REGULATION	±1.0%						
	LOAD REGULATION	±2.0%						
	SETUP, RISE TIME	1200ms, 80ms / 230VAC 1200ms, 80ms / 115VAC at full load						
	HOLD UP TIME (Typ.)	60ms / 230VAC 30ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.4	90 ~ 295VAC 127 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.95/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	84.5%	86.5%	90%	90%	90%	90%	89%
	AC CURRENT (Typ.)	12V:0.8A/115VAC 0.4A/230VAC 0.3A/277VAC 15V:0.9A/115VAC 0.45A/230VAC 0.35A/277VAC 20V ~ 48V:1.1A/115VAC 0.55A/230VAC 0.45A/277VAC						
	INRUSH CURRENT(max.)	COLD START 40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT (Typ.)	95 ~ 102%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	13 ~ 16V	16.5 ~ 20V	22 ~ 27V	27 ~ 34V	30 ~ 36V	39 ~ 48V	52 ~ 64V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE	90℃ ±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS Note.8	UL879, UL8750, UL1310 Class 2, TUV EN60950-1, EN61347-1, EN61347-2-13 independent CAN/CSA C22.2 No. 223-M91(except for 48V), IP67 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	301Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	222.2*68*38.8mm (L*W*H)						
	PACKING	1.0Kg; 12pcs/13Kg/0.58CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. This is the maximum possible output current and power, over load protection may be activated slightly below this level to comply with the requirement of UL1310 class 2.
6. 3 years warranty is guaranteed for operating ambient temperature no higher than 68℃.
7. Constant current operation region is within 75% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
8. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.
9. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

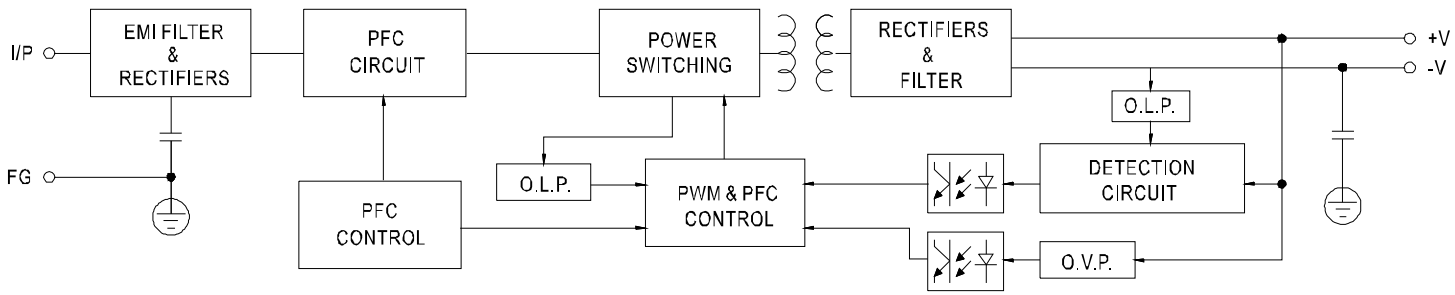
■ Mechanical Specification

Case No. 954A Unit:mm

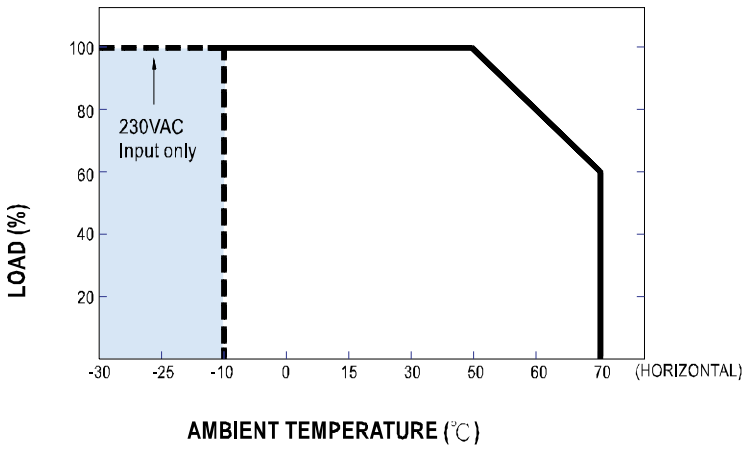


■ Block Diagram

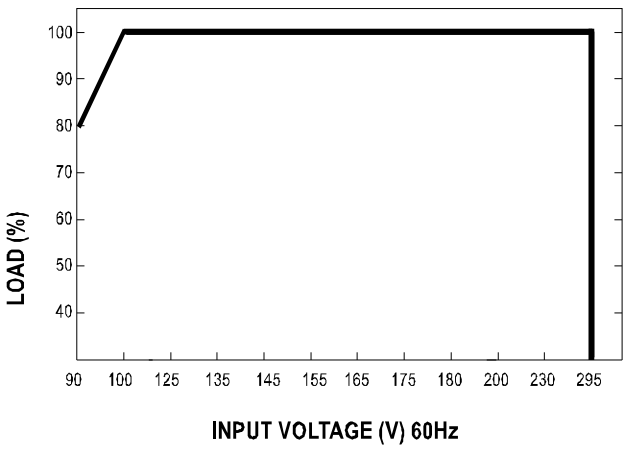
Fosc : 100KHz



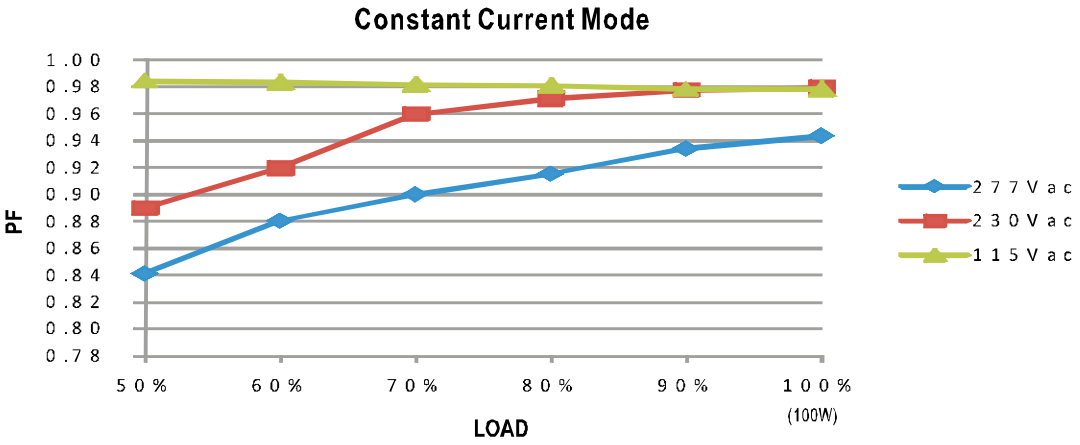
■ Derating Curve



■ Static Characteristics

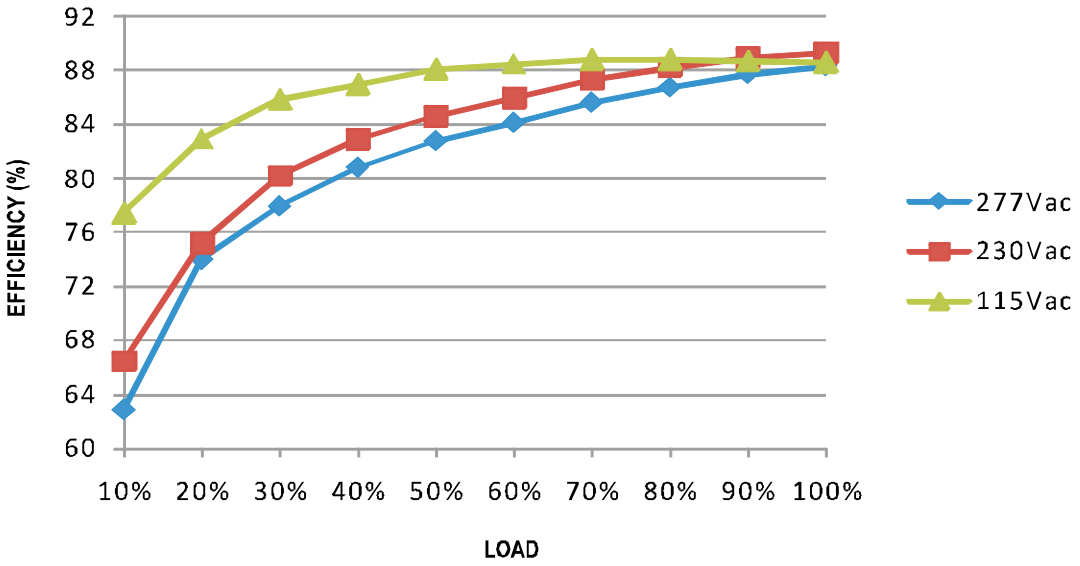


■ Power Factor Characteristic



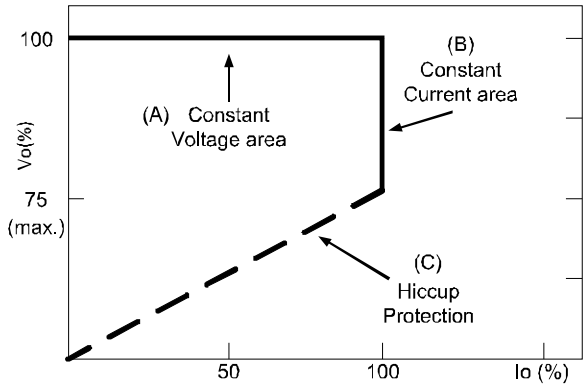
■ EFFICIENCY vs LOAD (48V Model)

CLG-100 series possess superior working efficiency that up to 89% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



Typical LED power supply I-V curve

NIETZ 150W Single Output Switching Power Supply CLG-150 series

■ Features :

- Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency up to 91%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP65 / IP67 design for indoor or outdoor installations
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting

CLG-150-12☐ Blank : IP67 rated. Cable for I/O connection.
A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
B : IP67 rated. Constant current level adjustable through output cable.
C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer.

SPECIFICATION

MODEL		CLG-150-12☐	CLG-150-15☐	CLG-150-20☐	CLG-150-24☐	CLG-150-30☐	CLG-150-36☐	CLG-150-48☐
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	48V
	CONSTANT CURRENT REGION Note.4	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	22.5 ~ 30V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	11A	9.5A	7.5A	6.3A	5A	4.2A	3.2A
	RATED POWER	132W	142.5W	150W	151.2W	150W	151.2W	153.6W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.6	9 ~ 13V	13 ~ 17V	17 ~ 22V	22 ~ 27V	26 ~ 32V	31 ~ 41V	40 ~ 56V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer or through output cable						
		5.5 ~ 11A	4.75 ~ 9.5A	3.75 ~ 7.5A	3.15 ~ 6.3A	2.5 ~ 5A	2.1 ~ 4.2A	1.6 ~ 3.2A
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	3000ms, 80ms at full load 230VAC /115VAC						
	HOLD UP TIME (Typ.)	50ms / 230VAC 16ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.5	90 ~ 295VAC 127 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	88%	88%	90%	90%	91%	91%	91%
	AC CURRENT (Typ.)	2A / 115VAC 1A / 230VAC 0.68A / 277VAC						
	INRUSH CURRENT(max.)	COLD START 65A/230VAC						
	LEAKAGE CURRENT	<1mA / 240VAC						
PROTECTION	OVER CURRENT (Typ.) Note.4	95 ~ 108%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	13.5 ~ 16V	18 ~ 20V	23 ~ 27V	28 ~ 34V	33 ~ 36V	42 ~ 48V	59 ~ 68V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE	100℃ ±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS Note.7	UL8750, UL1012 ; EN61347-1, EN61347-2-13 independent (except for CLG-150 C type) ; UL60950-1, TUV EN60950-1 ; J61347-1(option, except for CLG-150 C type), J61347-2-13, IP65 or IP67 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	303.7Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	222.2*68*38.8mm (L*W*H)(CLG-150-Blank/A/B) 229*68*38.8mm (L*W*H)(CLG-150-C)						
	PACKING	1.0Kg; 12pcs/13Kg/0.58CUFT(CLG-150-Blank/A/B) 1Kg; 12pcs/13Kg/0.96CUFT(CLG-150-C)						

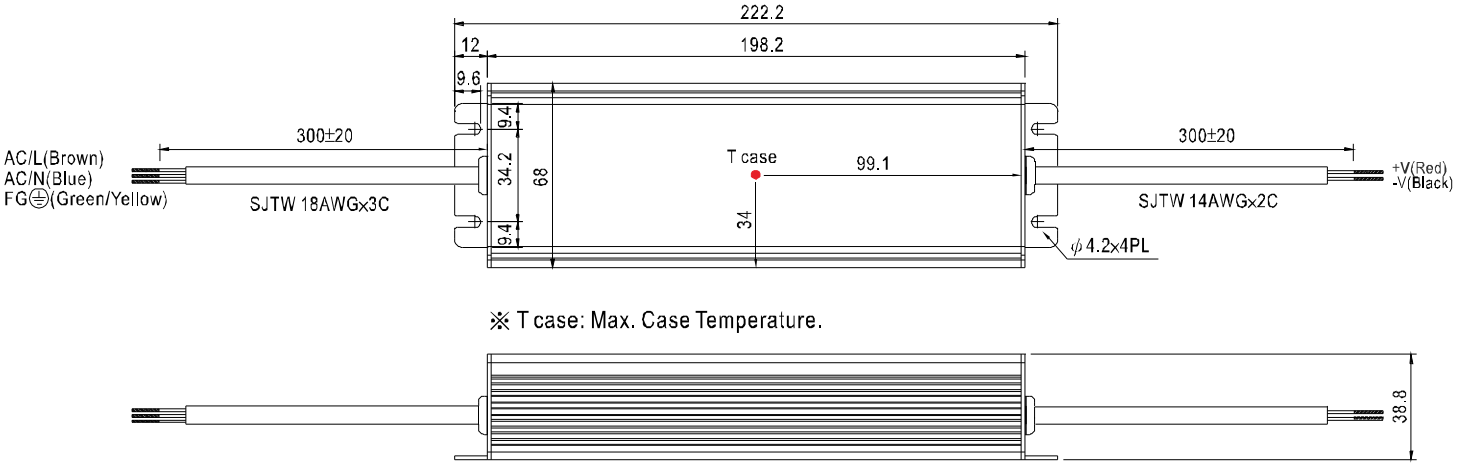
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Constant current operation region is within 75% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
5. Derating may be needed under low input voltages. Please check the static characteristics for more details.
6. Type A and type C only.
7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

■ Mechanical Specification

Case No. 954A Unit:mm

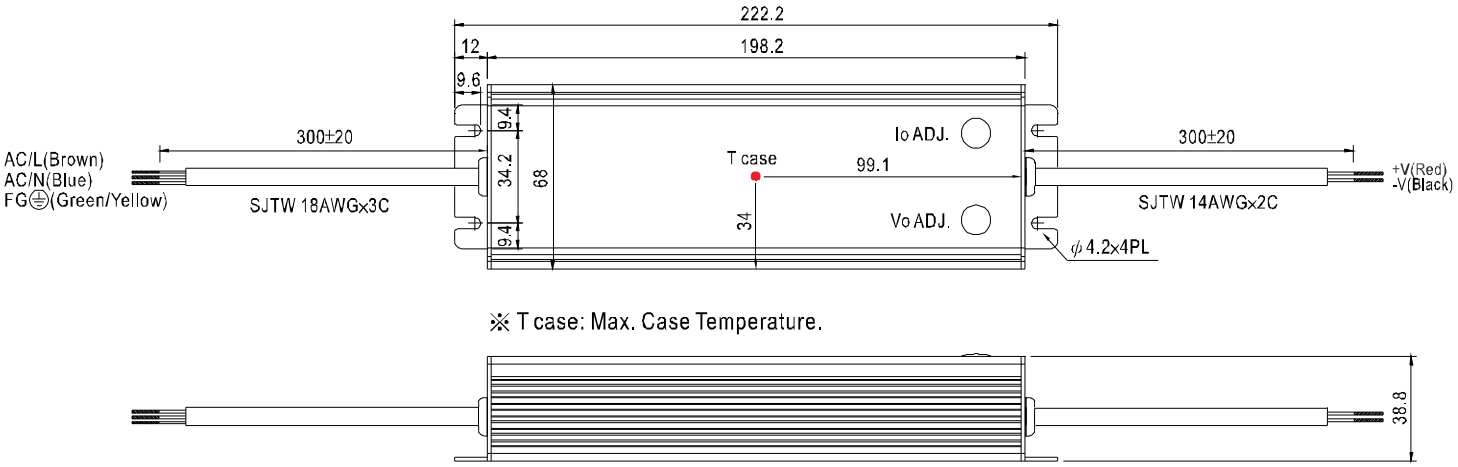
Blank:(CLG-150)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

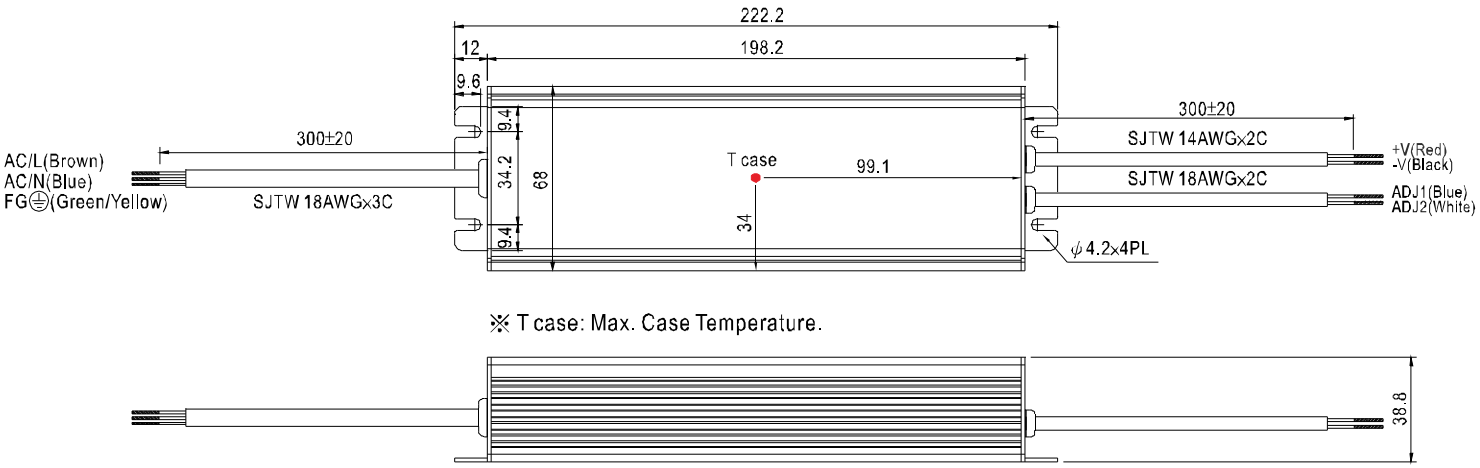
A Type:(CLG-150-_A)



※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(CLG-150-_B)



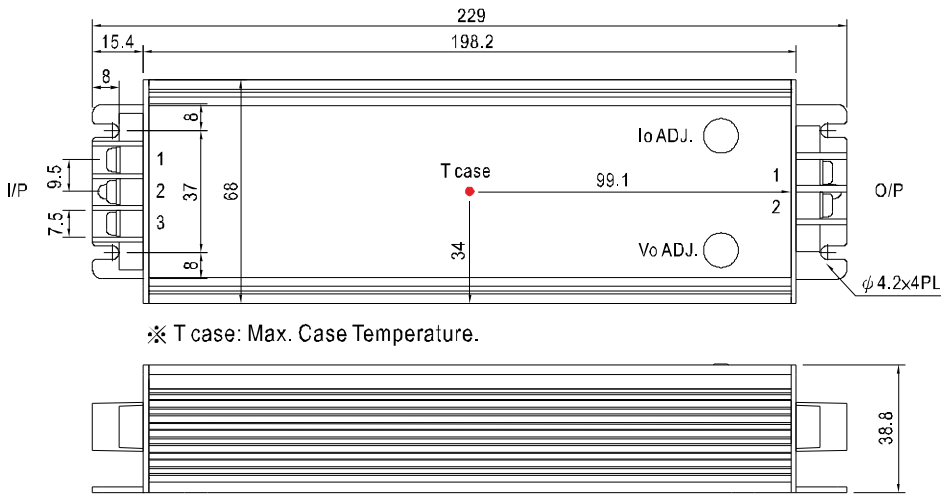
※ T case: Max. Case Temperature.

※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor between ADJ1 and ADJ2.

※ Reference resistance value for output current adjustment (Typical)

Resistance	Percentage of rated current
Open	Slightly > 100%
4.7KΩ	100%
620Ω	75%
82Ω	50%
Short	Slightly < 50%

C Type:(CLG-150-_C)



※ T case: Max. Case Temperature.

※ Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

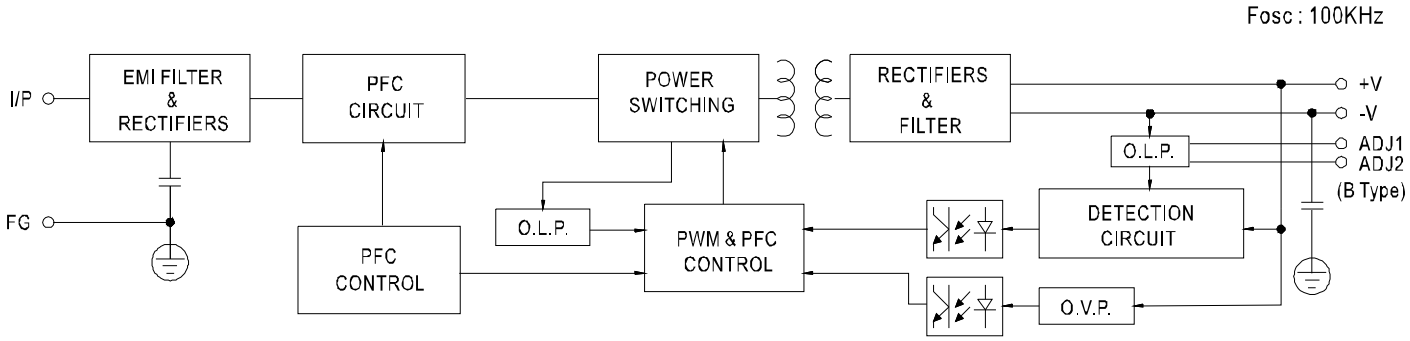
AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

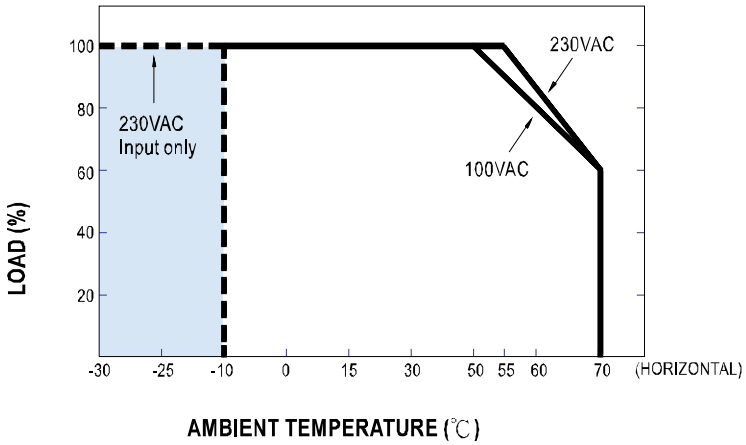
DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1	+V
2	-V

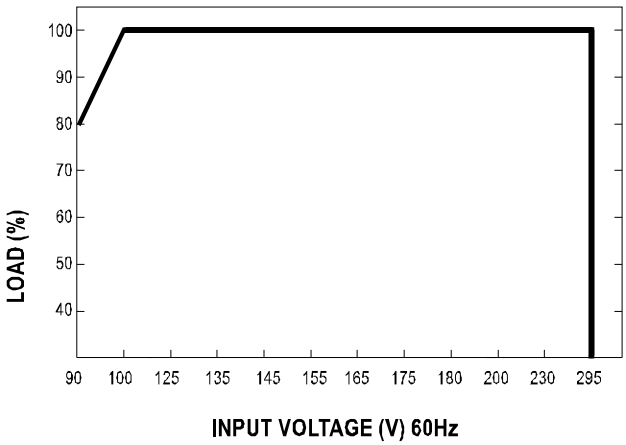
Block Diagram



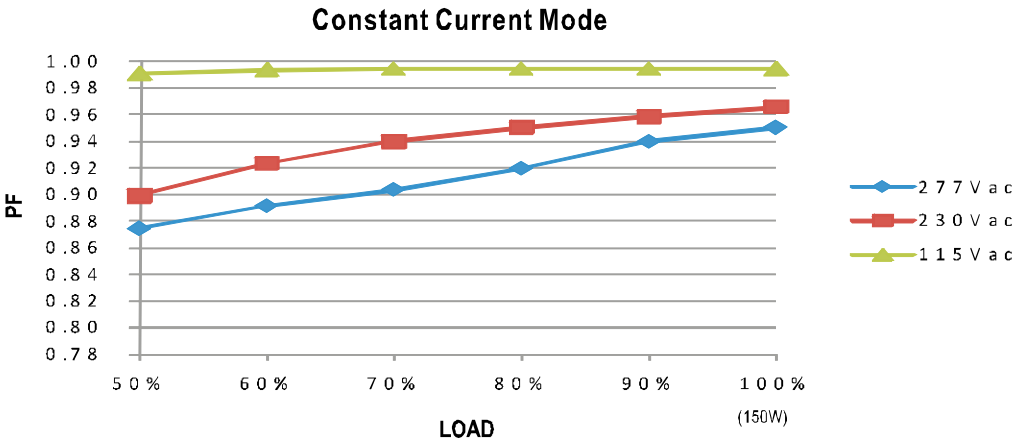
Derating Curve



Static Characteristics

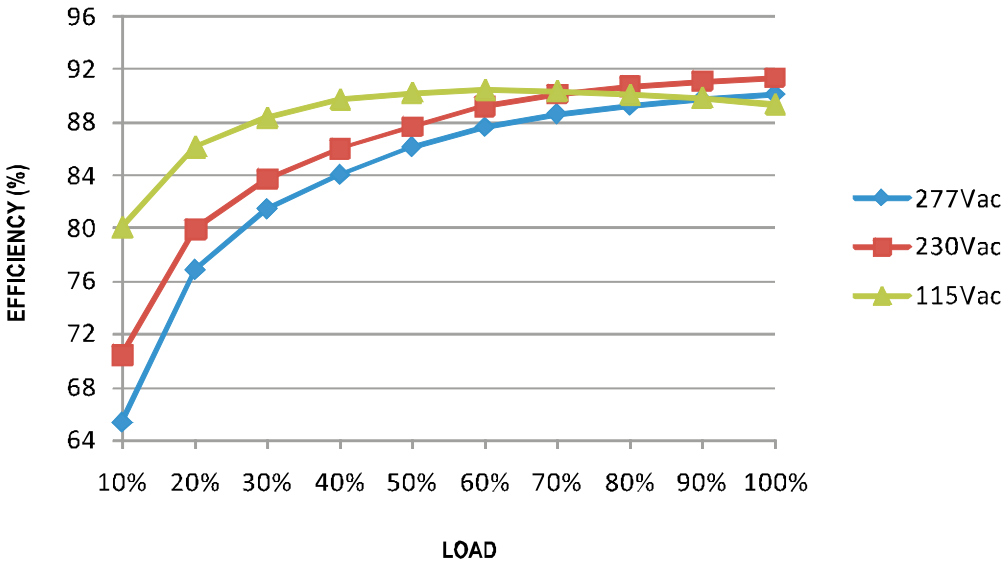


■ Power Factor Characteristic



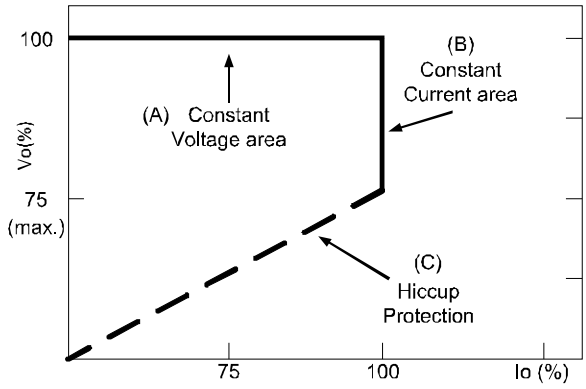
■ EFFICIENCY vs LOAD (48V Model)

CLG-150 series possess superior working efficiency that up to 91% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



Typical LED power supply I-V curve

NIETZ 30W Dual Output Switching Power Supply D-30 series

Features :

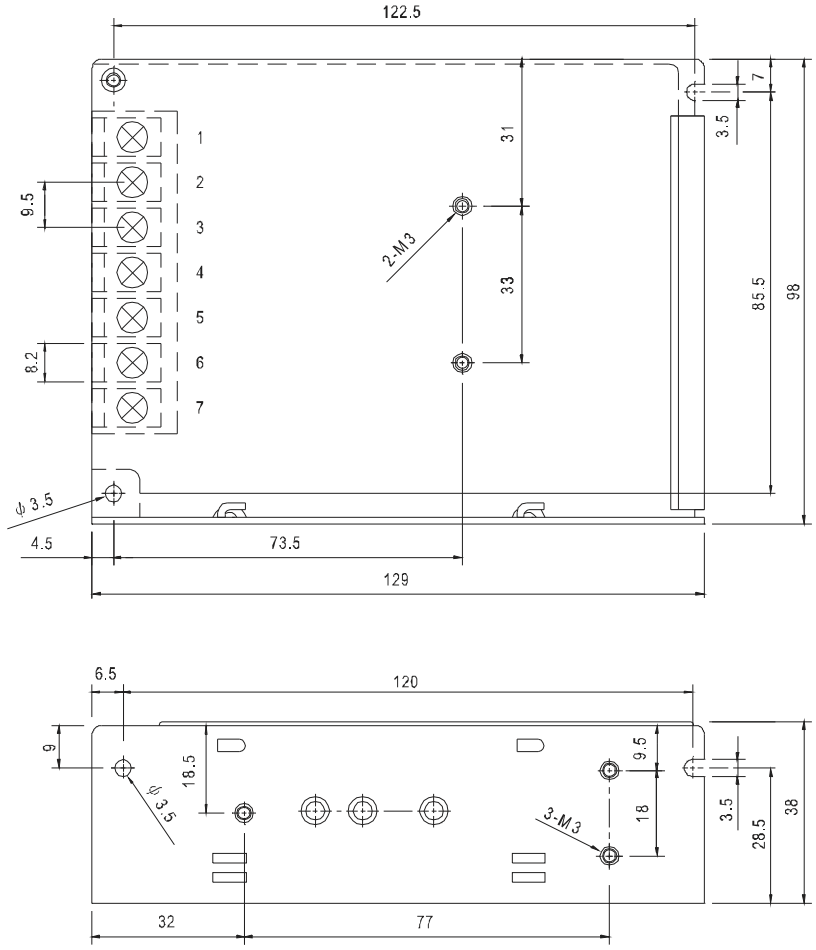
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 23KHz
- 1 year warranty

SPECIFICATION

MODEL		D-30A		D-30B	
OUTPUT	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	4A	1A	2.2A	1A
	CURRENT RANGE	0.5 ~ 4A	0.1 ~ 1A	0.5 ~ 4A	0.1 ~ 1A
	RATED POWER	32W		35W	
	RIPPLE & NOISE (max.) Note.2	50mVp-p	100mVp-p	50mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	CH1 : 4.75 ~ 5.5V		CH1 : 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	+ 3,-7%	±2%	+ 3,-5%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION	±0.5%	±4.0%	±0.5%	±4.0%
	SETUP, RISE, HOLD TIME	200ms, 50ms, 30ms at full load			
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	72%		74%	
	AC CURRENT	0.8A/115VAC 0.45A/230VAC			
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 150% rated output power			
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction			
OTHERS	MTBF	417.6K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	129*98*38mm (L*W*H)			
	PACKING	0.41Kg; 30pcs/13.4Kg/0.86CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

■ Mechanical Specification

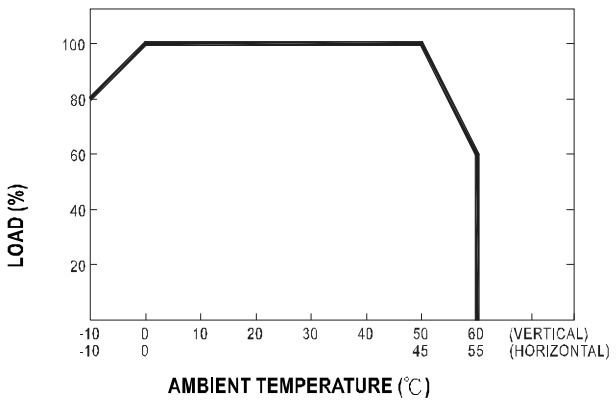
Case No. 903 Unit:mm



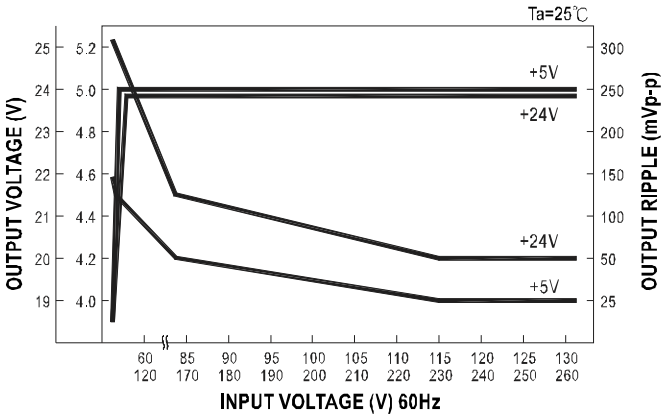
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT COM	7	DC OUTPUT +V1
2	AC/N	5	DC OUTPUT +V2		
3	FG ⏚	6	DC OUTPUT COM		

■ Output Derating



■ Static Characteristics (B)



NIETZ 50W Dual Output Switching Power Supply D-50 series

■ Features :

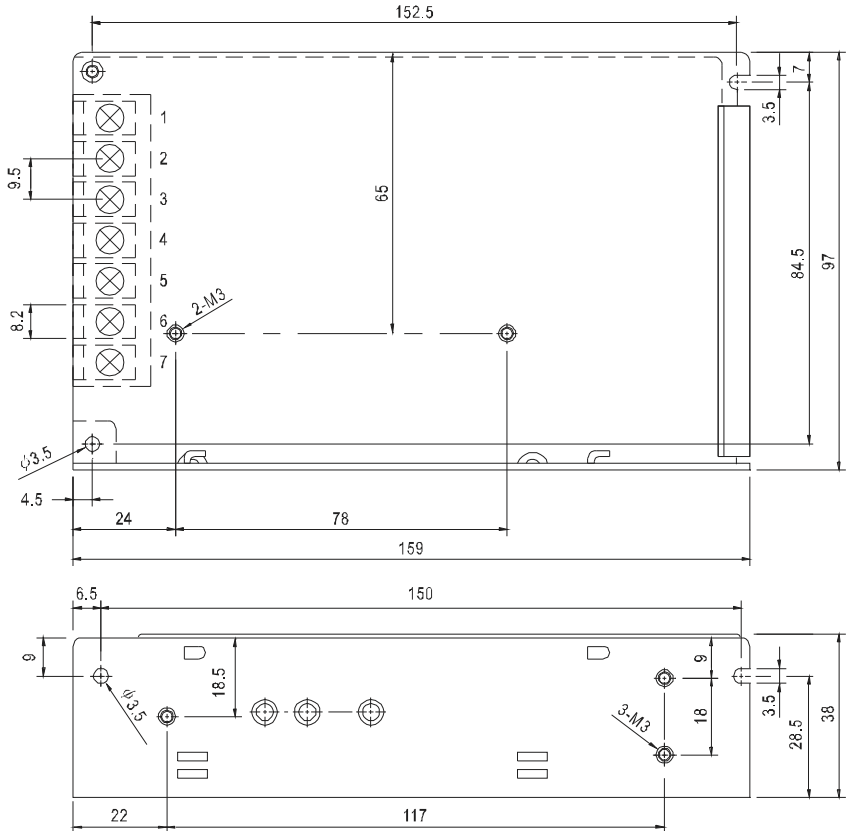
- AC input selectable by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 24KHz I/P-O/P:Rated
- 1 year warranty

SPECIFICATION

MODEL		D-50A		D-50B	
OUTPUT	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	6A	2A	6A	1A
	CURRENT RANGE	1 ~ 6A	0.3 ~ 2A	1 ~ 6A	0.2 ~ 1A
	RATED POWER	54W		54W	
	RIPPLE & NOISE (max.) Note.2	50mVp-p	100mVp-p	50mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	CH1 : 4.75 ~ 5.5V		CH1 : 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	+5,-8%	±2.0%	±8.0%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION	±0.5%	±5.0%	±0.5%	±8.0%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 20ms at full load			
INPUT	VOLTAGE RANGE	85 ~ 132VAC/170 ~ 264VAC selected by switch 240 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	73%		73%	
	AC CURRENT	1.3A/115VAC 0.65A/230VAC			
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC			
	LEAKAGE CURRENT	<0.5mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 150% rated output power			
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃) on +5V output			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction			
OTHERS	MTBF	408.9K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.53Kg; 24pcs/13.6Kg/0.75CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

■ Mechanical Specification

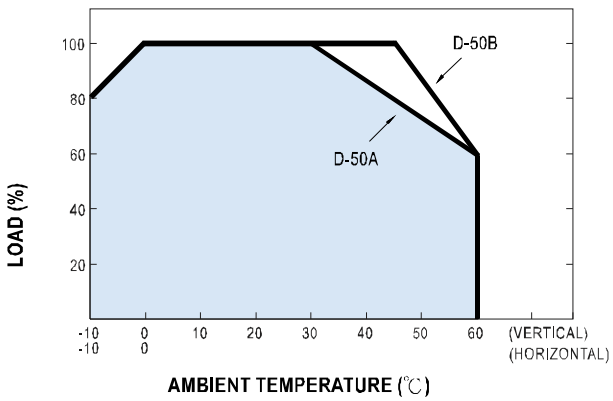
Case No. 901 Unit:mm



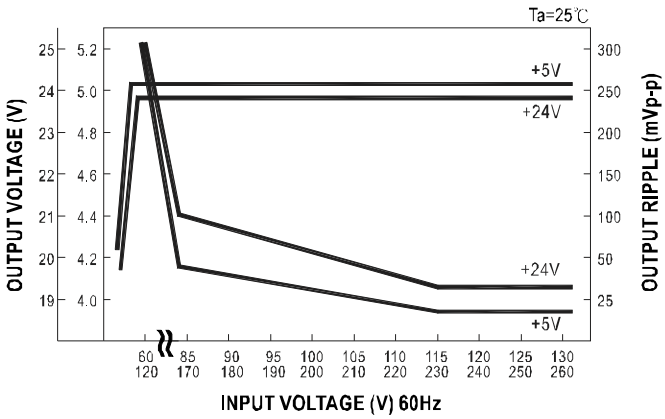
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT +V2
2	AC/N	5,6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1

■ Output Derating



■ Static Characteristics (B)



NIETZ 60W Dual Output Switching Power Supply D-60 series

■ Features :

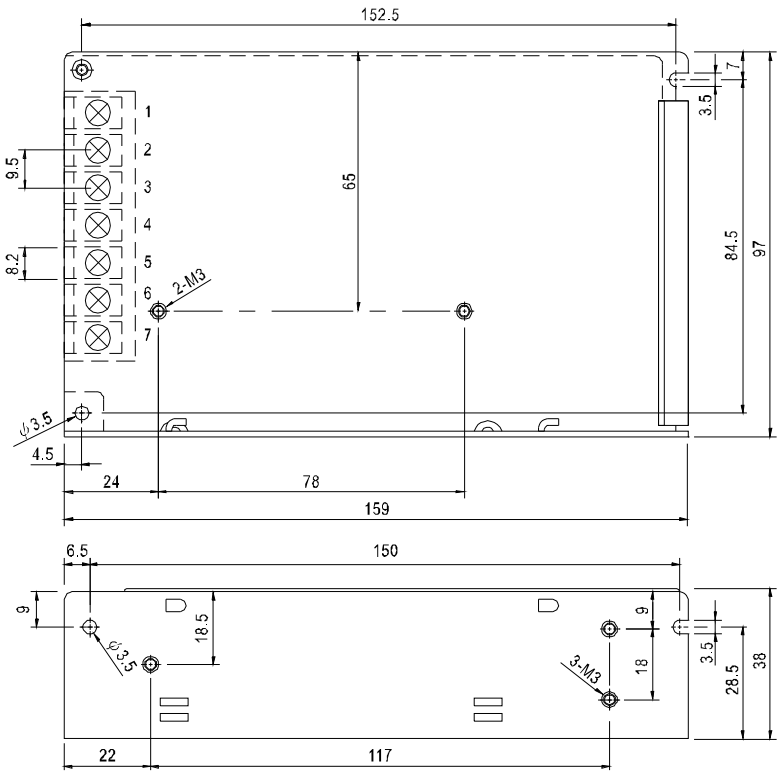
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 54KHz

SPECIFICATION

MODEL		D-60A		D-60B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	4A	3A	3A	1.8A
	CURRENT RANGE	0.3 ~ 6A	0.2 ~ 4A	0.3 ~ 6A	0.2 ~ 2.2A
	RATED POWER	56W		58W	
	RIPPLE & NOISE (max.) Note.2	75mVp-p	150mVp-p	75mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	CH1 : 4.75 ~ 5.5V		CH1 : 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±5.0%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±4.0%	±0.5%	±4.0%
	SETUP, RISE TIME	300ms, 50ms / 230VAC 800ms, 50ms / 115VAC at full load			
	HOLD UP TIME (Typ.)	80ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	73%		76%	
	AC CURRENT (Typ.)	2A/115VAC 1A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<3.5mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
	OVER VOLTAGE	5V : 5.75 ~ 6.75V			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃) on +5V output			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, UL60950-1, TUV EN60950-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A			
OTHERS	MTBF	301.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.54Kg; 24pcs/13.8Kg/0.75CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

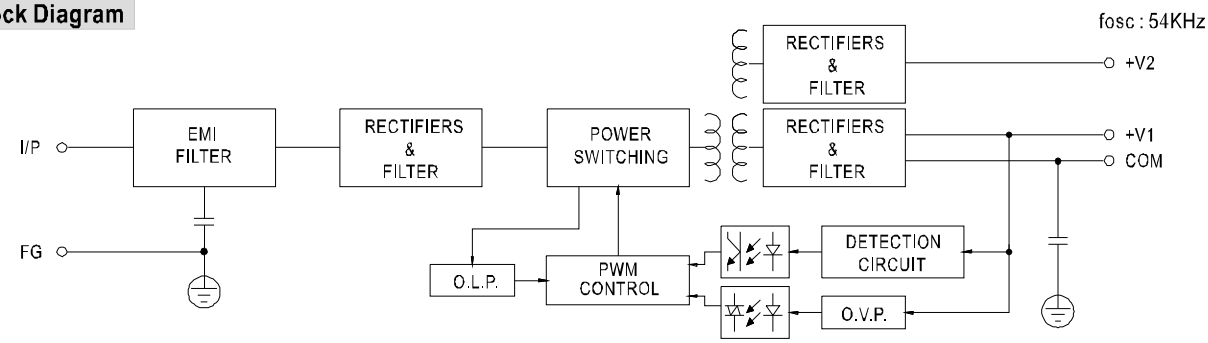
Case No. 901 Unit:mm



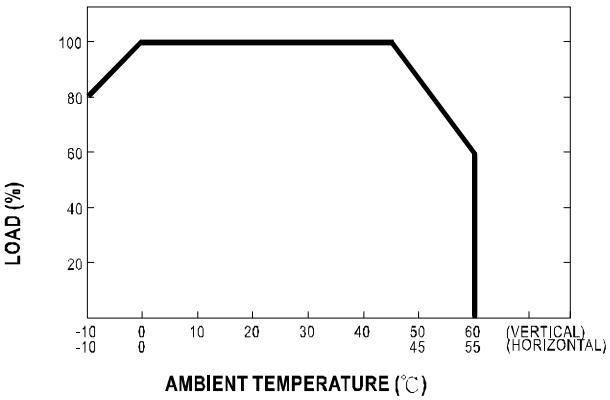
Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT +V2
2	AC/N	5	DC OUTPUT +V1
3	FG ⏚	6,7	DC OUTPUT COM

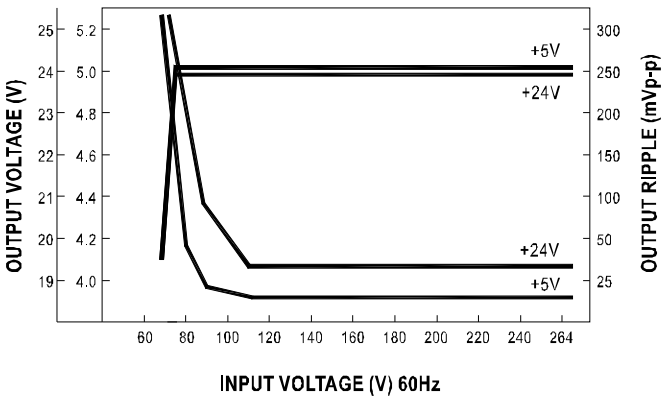
■ Block Diagram



■ Derating Curve



■ Static Characteristics (B)



NIETZ 120W Dual Output Switching Power Supply D-120 series

■ Features :

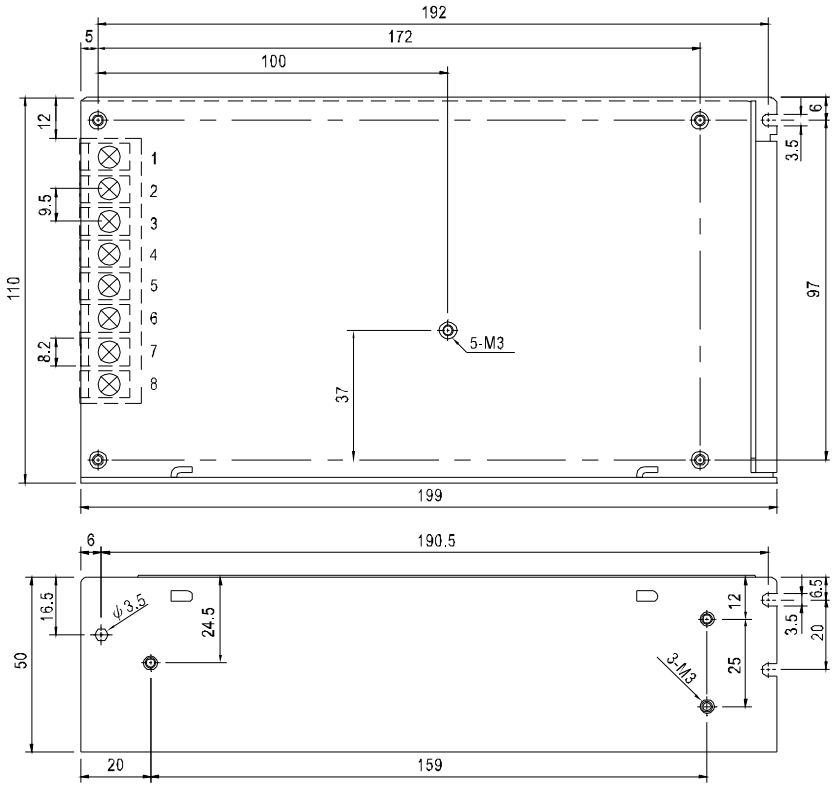
- AC input range selected by switch
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 28KHz

SPECIFICATION

MODEL		D-120A		D-120B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	12A	5A	6A	4A
	CURRENT RANGE	2 ~ 12A	0.5 ~ 5A	2 ~ 10A	0.4 ~ 4A
	RATED POWER	120W		126W	
	RIPPLE & NOISE (max.) Note.2	60mVp-p	120mVp-p	60mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V			
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±7.0%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION	±0.5%	±5.0%	±0.5%	±6.0%
	SETUP, RISE TIME	200ms, 50ms at full load			
	HOLD UP TIME (Typ.)	24ms at full load			
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by switch 248 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	78%		80%	
	AC CURRENT (Typ.)	2.2A/115VAC 1.3A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 32A			
	LEAKAGE CURRENT	<3.5mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 135% rated output power			
		Protection type : Shut down o/p voltage, re-power on to recover			
	OVER VOLTAGE	CH1:5.75 ~ 6.75VDC			
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃) on +5V output			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, CCC GB4943 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A			
OTHERS	MTBF	272.8K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	199*110*50mm (L*W*H)			
	PACKING	0.82Kg; 16pcs/14.2Kg/0.95CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

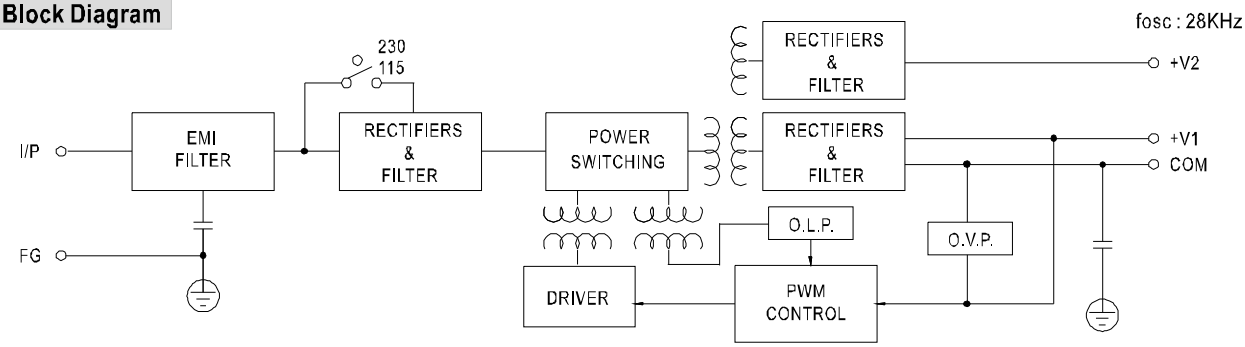
Case No. 906 Unit:mm



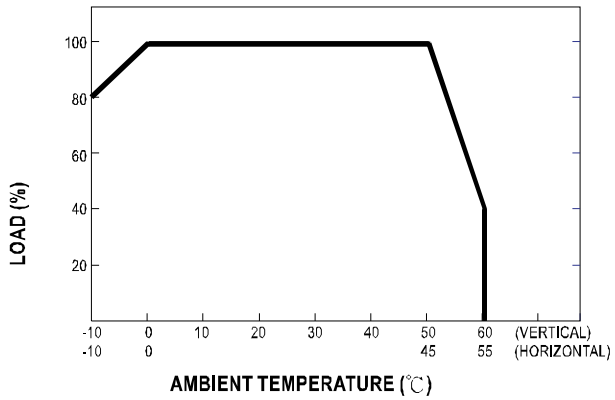
Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT +V2
2	AC/N	5,6	DC OUTPUT COM
3	FG ⏚	7,8	DC OUTPUT +V1

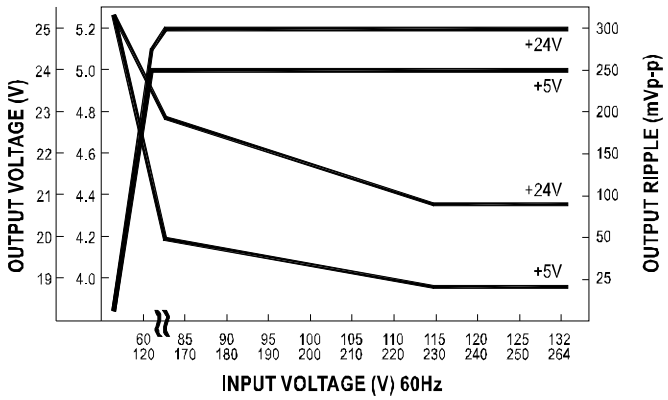
■ Block Diagram



■ Derating Curve



■ Static Characteristics(B)



NIETZ 15W Single Output Industrial DIN Rail Power Supply DR-15 series

■ Features :

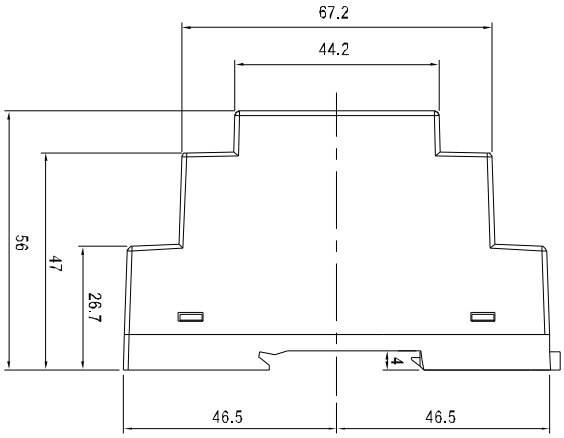
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Isolation class Ⅱ
- LED indicator for power on
- No load power consumption<0.5W
- 100% full load burn-in test

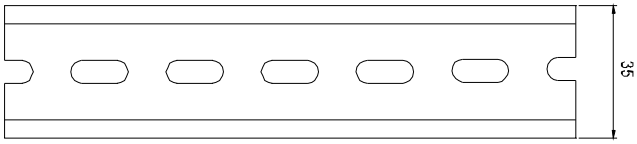
SPECIFICATION

MODEL		DR-15-5	DR-15-12	DR-15-15	DR-15-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	2.4A	1.25A	1A	0.63A
	CURRENT RANGE	0 ~ 2.4A	0 ~ 1.25A	0 ~ 1A	0 ~ 0.63A
	RATED POWER	12W	15W	15W	15.2W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms, 50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	70ms/230VAC 16ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	77%	84%	83.5%	85%
	AC CURRENT (Typ.)	0.88A/115VAC 0.48A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 35A/115VAC 65A/230VAC			
PROTECTION	OVERLOAD Note.5	105 ~ 160% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut off o/p voltage, clamping by zener diode			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved, design refer to EN50178			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC			
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A			
OTHERS	MTBF	1172.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	25*93*56mm (W*H*D)			
	PACKING	0.1Kg; 140pcs/15Kg/0.92CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Constant current operation region is within 60% ~100% rated output voltage. Protection type for short circuit is hiccup mode and will recover automatically after fault condition is removed.				

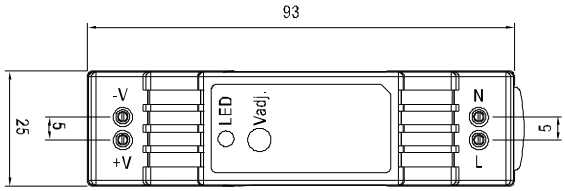
■ Mechanical Specification

Case No.985A Unit:mm

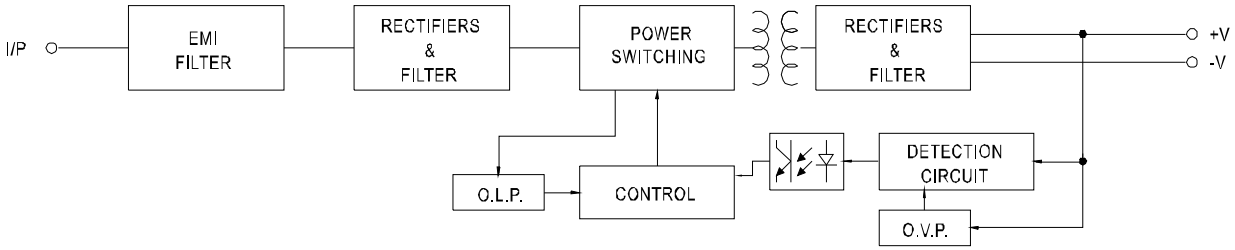




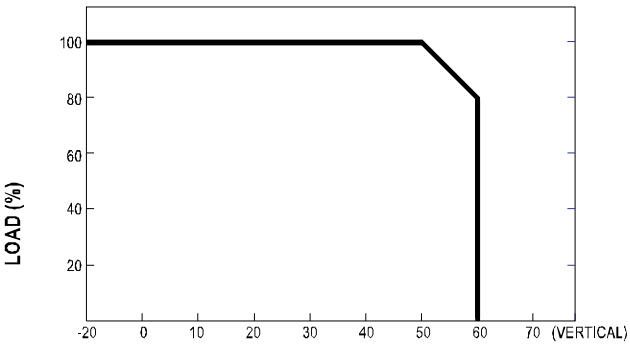
ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15



■ Block Diagram

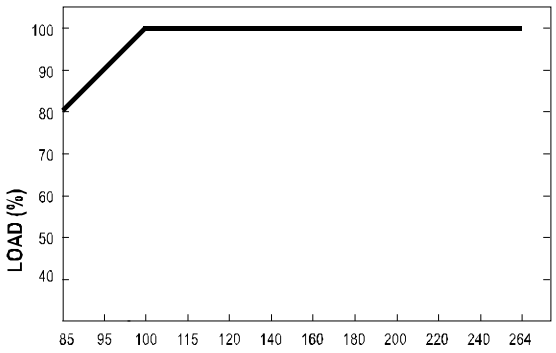


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 30W Single Output Industrial DIN Rail Power Supply DR-30 series

■ Features :

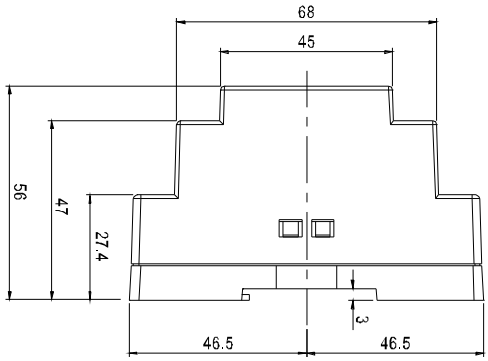
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Isolation class Ⅱ
- LED indicator for power on
- 100% full load burn-in test

SPECIFICATION

MODEL		DR-30-5	DR-30-12	DR-30-15	DR-30-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	3A	2A	2A	1.5A
	CURRENT RANGE	0 ~ 3A	0 ~ 2A	0 ~ 2A	0 ~ 1.5A
	RATED POWER	15W	24W	30W	36W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	100ms, 30ms/230VAC 100ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	100ms/230VAC 21ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	74%	81%	82%	83%
	AC CURRENT (Typ.)	0.88A/115VAC 0.48A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 15A/115VAC 30A/230VAC			
PROTECTION	OVERLOAD	105 ~ 160% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved, Design refer to EN50178			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC			
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A			
OTHERS	MTBF	441.5K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	78*93*56mm (W*H*D)			
	PACKING	0.27Kg; 48pcs/14Kg/1.02CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

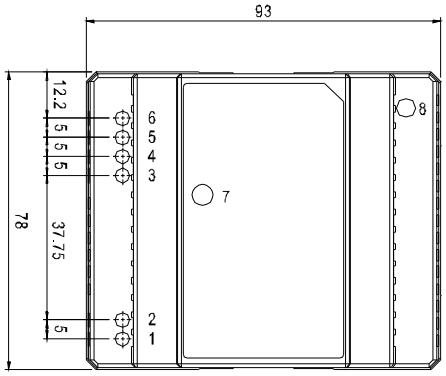
■ Mechanical Specification

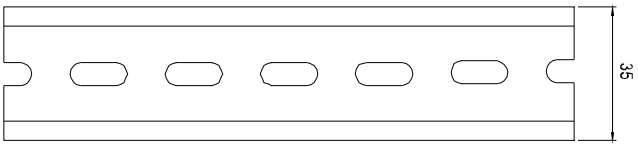
Case No. 918B Unit:mm



Terminal Pin No. Assignment

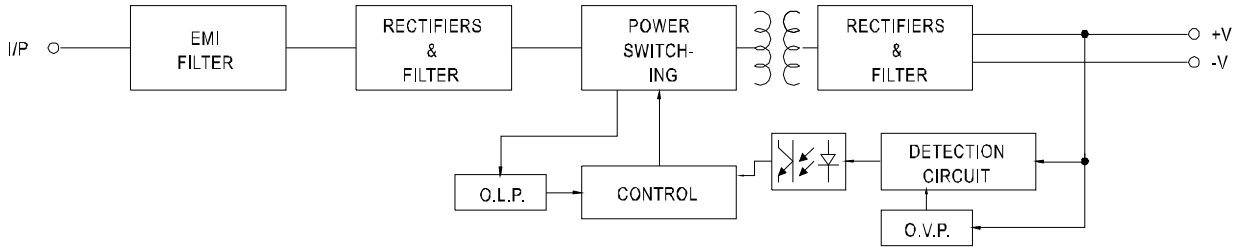
Pin No.	Assignment	Pin No.	Assignment
1	AC/N	5,6	-V
2	AC/L	7	LED
3,4	+V	8	+V ADJ.



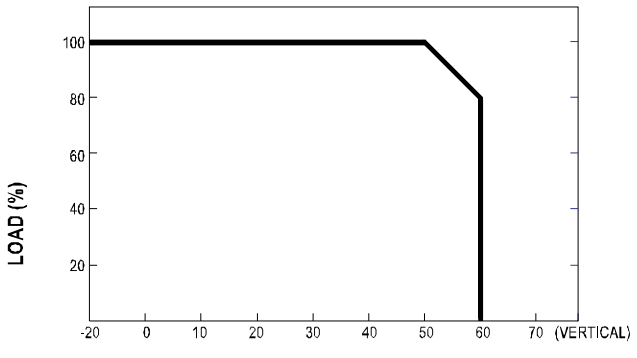


ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

■ Block Diagram

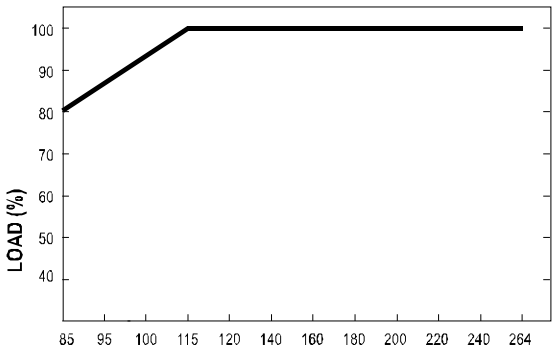


■ Derating Curve



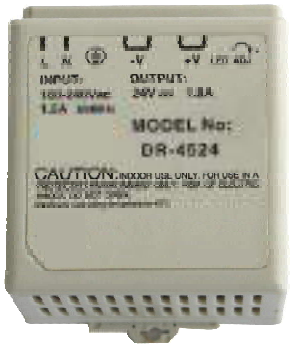
AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 5W Single Output Industrial DIN Rail Power Supply DR-45 series



■ Features :

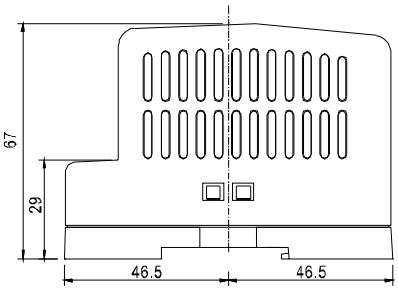
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 100KHz

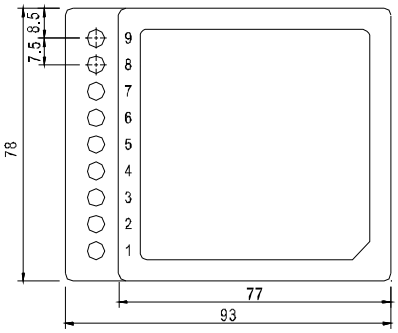
SPECIFICATION

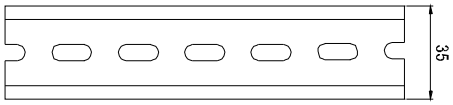
MODEL		DR-4505	DR-4512	DR-4515	DR-4524
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	5A	3.5A	2.8A	2A
	CURRENT RANGE	0 ~ 5A	0 ~3. 5A	0 ~ 2.8A	0 ~ 2A
	RATED POWER	25W	42W	42W	48W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	200mVp-p	240mVp-p	480mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 60ms/230VAC at full load			
	HOLD UP TIME (Typ.)	60ms/230VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	72%	77%	77%	80%
	AC CURRENT (Typ.)	1.5A/115VAC 0.75A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 28A/115VAC 56A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut off o/p voltage, clamping by zener diode			
	OVER TEMPERATURE	Tj 135℃ typically (U1) detect on heat sink of power transistor			
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-10 ~ +50℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011,EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A			
OTHERS	MTBF	364.6K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	93*78*67mm (L*W*H)			
	PACKING	0.31Kg; 48pcs/17.5Kg/1.3CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

Case No. 918A Unit:mm







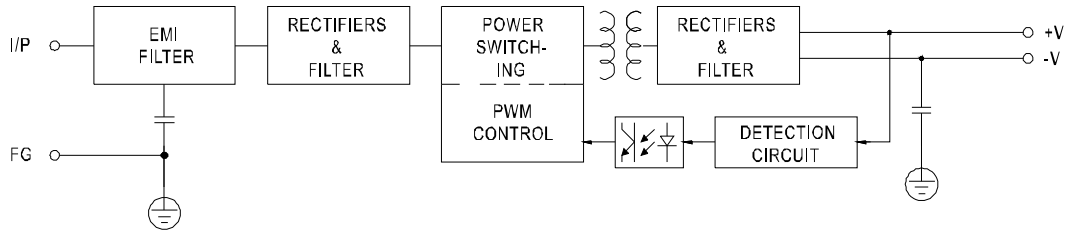
Install DIN rail TS35/7.5 or TS35/15

Terminal Pin No. Assignment

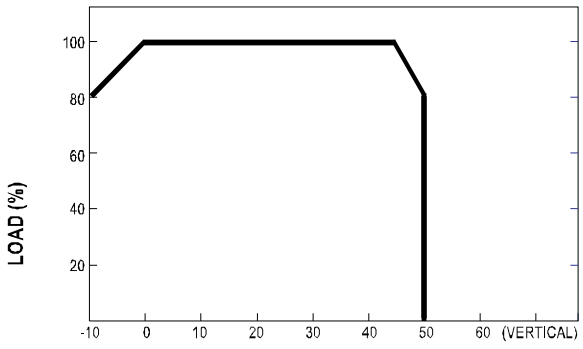
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	6,7	DC OUTPUT+V
2	AC/N	8	LED
3	FG ⏚	9	+V ADJ.
4,5	DC OUTPUT -V		

■ Block Diagram

fosc : 100KHz

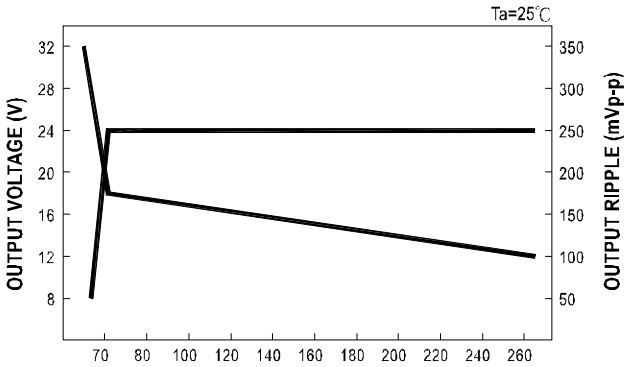


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics (24V)



INPUT VOLTAGE (V) 60Hz

NIETZ 60W Single Output Industrial DIN Rail Power Supply DR-60 series

■ Features :

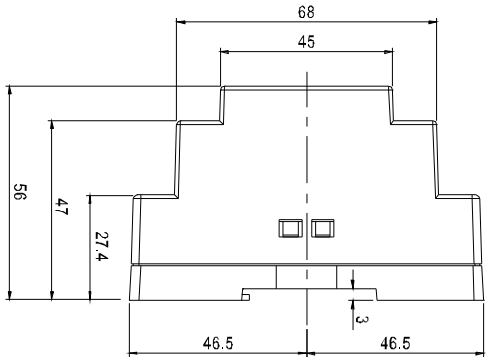
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Isolation class II
- LED indicator for power on
- 100% full load burn-in test

SPECIFICATION

MODEL		DR-60-5	DR-60-12	DR-60-15	DR-60-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	6.5A	4.5A	4A	2.5A
	CURRENT RANGE	0 ~ 6.5A	0 ~ 4.5A	0 ~ 4A	0 ~ 2.5A
	RATED POWER	32.5W	54W	60W	60W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	11.1 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	100ms, 30ms/230VAC 200ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	100ms/230VAC 23ms/115VAC at full load			
INPUT	VOLTAGE RANGE	88 ~ 264VAC 124 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	76%	82%	83%	84%
	AC CURRENT (Typ.)	1.2A/115VAC 0.8A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 18A/115VAC 36A/230VAC			
PROTECTION	OVERLOAD	105 ~ 160% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.9V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved, Design refer to EN50178			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC			
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A			
OTHERS	MTBF	216.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	78*93*56mm (W*H*D)			
	PACKING	0.3Kg; 48pcs/15.4Kg/1.02CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

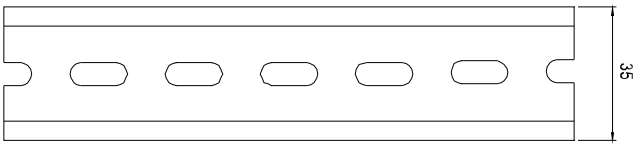
■ Mechanical Specification

Case No.918B Unit:mm

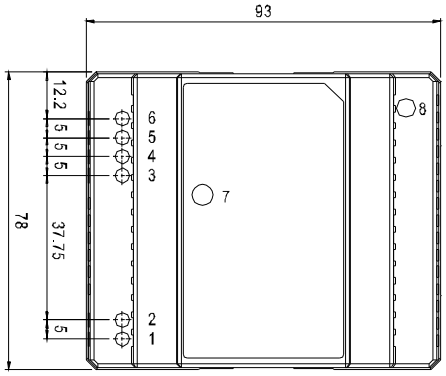


Terminal Pin No. Assignment

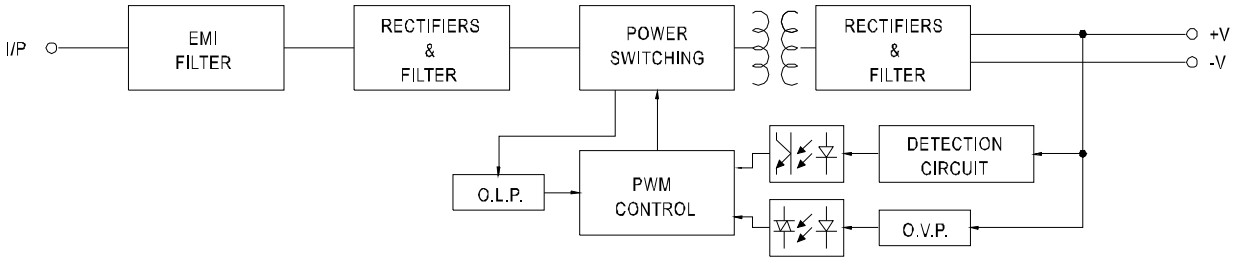
Pin No.	Assignment	Pin No.	Assignment
1	AC/N	5,6	-V
2	AC/L	7	LED
3,4	+V	8	+V ADJ.



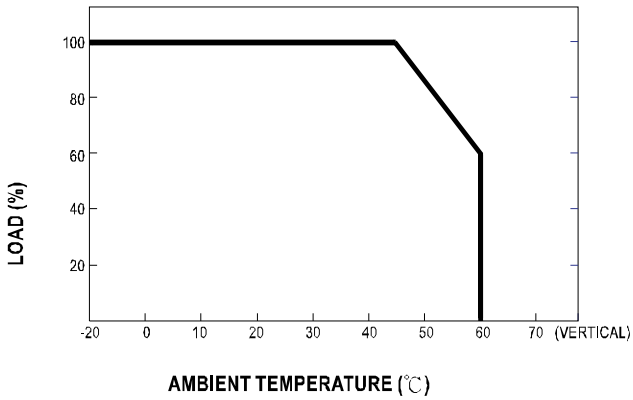
ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15



■ Block Diagram



■ Derating Curve



NIETZ 75W Single Output Industrial DIN Rail Power Supply DR-75 series

■ Features :

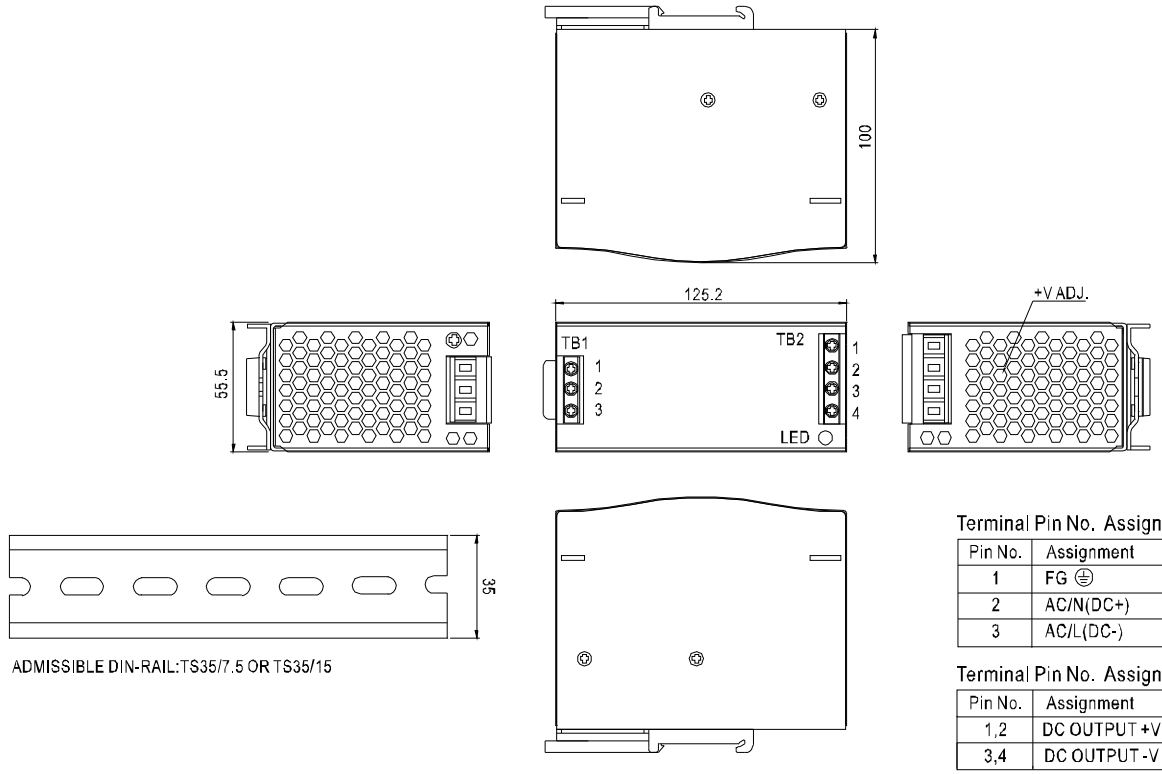
- Universal AC input / Full range
- Protections:Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- LED indicator for power on
- 100% full load burn-in test
- Fix switching frequency at 50KHz

SPECIFICATION

MODEL		DR-75-12	DR-75-24	DR-75-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	6.3A	3.2A	1.6A
	CURRENT RANGE	0 ~ 6.3A	0 ~ 3.2A	0 ~ 1.6A
	RATED POWER	76W	76.8W	76.8W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	150mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	1000ms, 60ms/230VAC 1800ms, 60ms/115VAC at full load		
	HOLD UP TIME (Typ.)	60ms/230VAC 12ms/115VAC at full load		
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	76%	80%	81%
	AC CURRENT (Typ.)	1.6A/115V 0.96A/230V		
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC		
	LEAKAGE CURRENT	<1mA / 240VAC		
PROTECTION	OVERLOAD	105 ~ 150% rated output power		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	15 ~ 16.5V	29 ~ 34V	58 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	85℃±5℃ (TSW1) detect on heat sink of power transistor		
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	Compliance to EN55011,EN55022 (CISPR22) Class B, EN61000-3-2,-3		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A		
OTHERS	MTBF	123.1K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	55.5*125.2*100mm (W*H*D)		
	PACKING	0.6Kg; 20pcs/13Kg/1.29CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.			

■ Mechanical Specification

Case No. 923 Unit:mm



Terminal Pin No. Assignment (TB1)

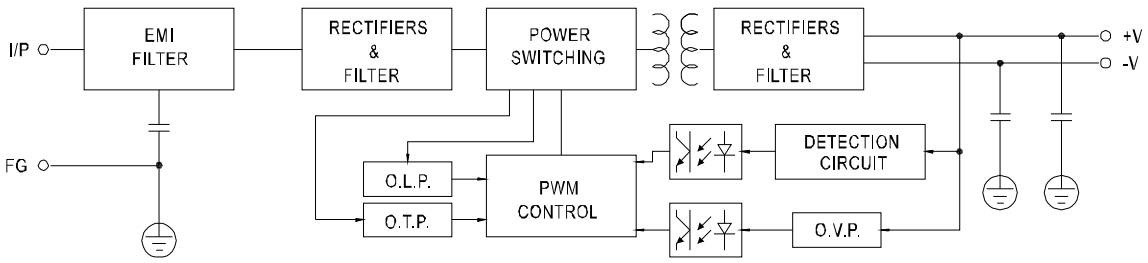
Pin No.	Assignment
1	FG ⏚
2	AC/N(DC+)
3	AC/L(DC-)

Terminal Pin No. Assignment (TB2)

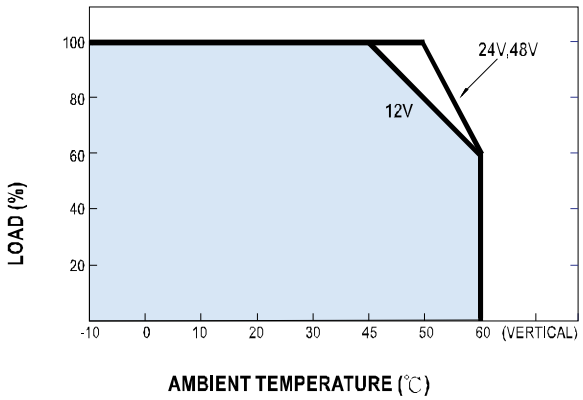
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

■ Block Diagram

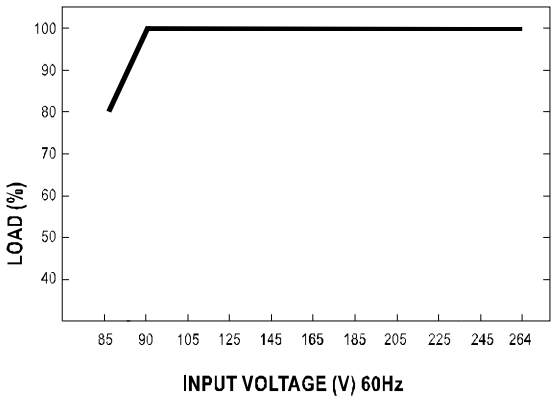
fosc : 50KHz



■ Output Derating



■ Output Derating Vs Input Voltage



NIETZ 100W Single Output Industrial DIN Rail Power Supply DR-100 series

■ Features :

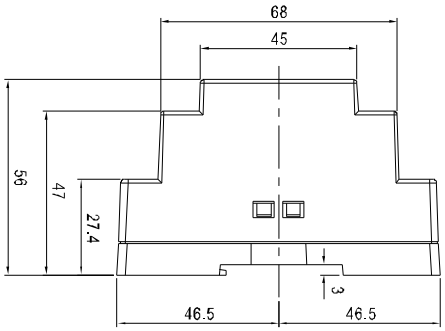
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- Isolation class Ⅱ
- LED indicator for power on
- No load power consumption<1W
- 100% full load burn-in test

SPECIFICATION

MODEL		DR-100-12	DR-100-15	DR-100-24
OUTPUT	DC VOLTAGE	12V	15V	24V
	RATED CURRENT	7.5A	6.5A	4.2A
	CURRENT RANGE	0 ~ 7.5A	0 ~ 6.5A	0 ~ 4.2A
	RATED POWER	90W	97.5W	100.8W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 15V	15 ~ 18V	24 ~ 29V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	2700ms, 80ms/230VAC 2700ms, 80ms/115VAC at full load		
	HOLD UP TIME (Typ.)	50ms/230VAC 18ms/115VAC at full load		
INPUT	VOLTAGE RANGE	88 ~ 264VAC 124 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	87%	87%	89%
	AC CURRENT (Typ.)	3A/115VAC 1.6A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 45A/230VAC		
PROTECTION	OVERLOAD Note.6	105 ~ 135% rated output power		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	16 ~ 20V	19 ~ 23V	30 ~ 35V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	90℃ ±15℃ (RTH2) detect on heatsink of power transistor		
		Protection type : Shut down o/p voltage, re-power on to recover		
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved, design refer to EN50178		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC		
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	Compliance to EN61204-3, EN55022 Class B, EN61000-3-2,-3		
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A		
OTHERS	MTBF	486K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	100*93*56mm (W*H*D)		
	PACKING	0.35Kg; 36pcs/13.6Kg/0.89CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Harmonic current test @ 90% load. 6. Under short circuit or overload >150% conditions, output voltage may shut down for 5 sec. and then go into constant current protection mode.			

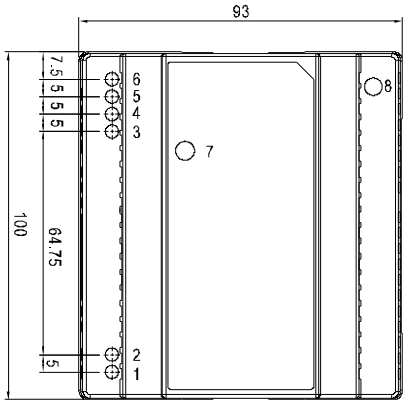
■ Mechanical Specification

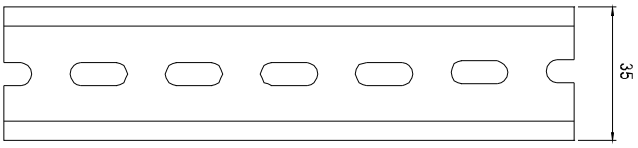
Case No.970A Unit:mm



Terminal Pin No. Assignment

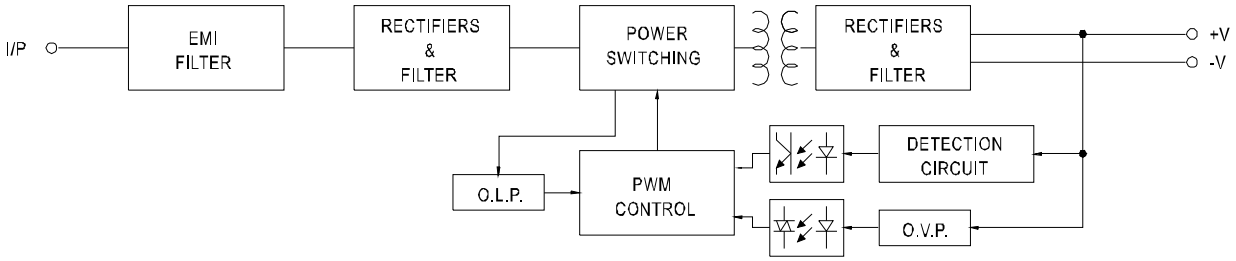
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5,6	-V
2	AC/N	7	LED
3,4	+V	8	+V ADJ.



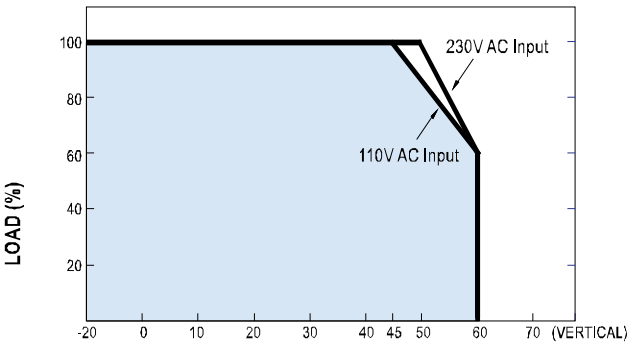


ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

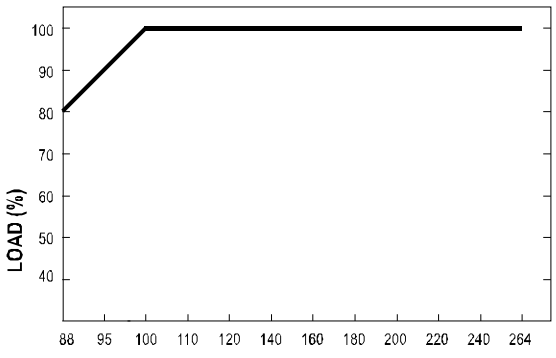
■ Block Diagram



■ Derating Curve VS Ambient Temperature



■ Output Derating VS Input Voltage



NIETZ 120W Single Output Industrial DIN RAIL Power Supply DR-120 series

■ Features :

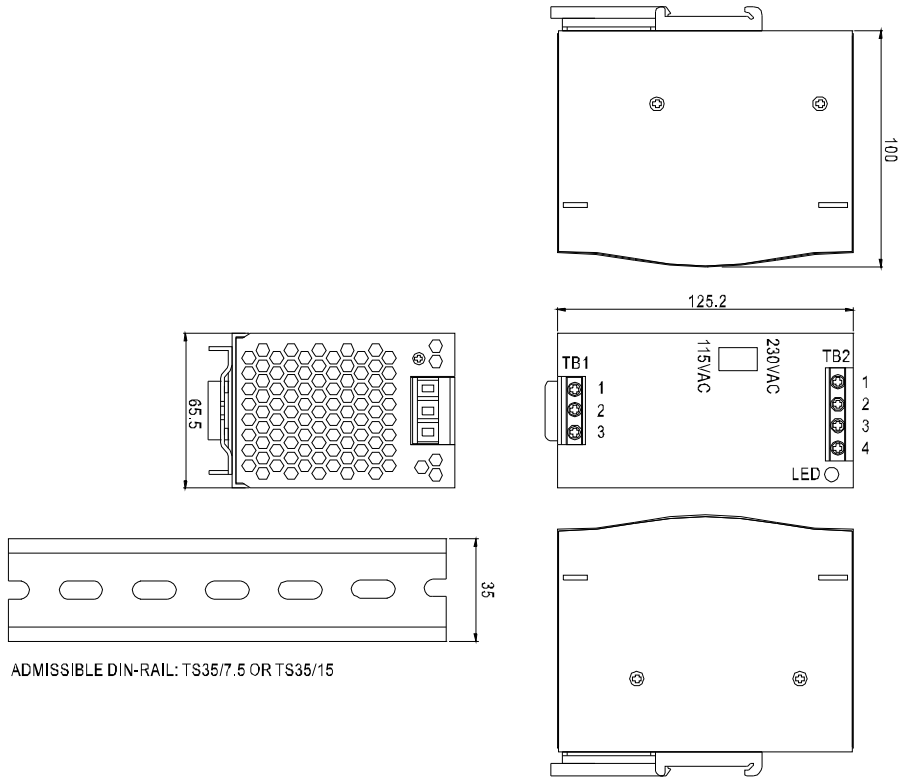
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at 55KHz

SPECIFICATION

MODEL		DR-120-12	DR-120-24	DR-120-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A
	RATED POWER	120W	120W	120W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	500ms, 70ms/230VAC 500ms, 70ms/115VAC at full load		
	HOLD UP TIME (Typ.)	36ms/230VAC 32ms/115VAC at full load		
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC by switch 248 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	80%	84%	85%
	AC CURRENT (Typ.)	2.6A/115VAC 1.6A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC		
	LEAKAGE CURRENT	<3.5mA / 240VAC		
PROTECTION	OVERLOAD	105 ~ 150% rated output power		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	15 ~ 16.5V	29 ~ 33V	58 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	85℃±5℃ (TSW1)	90℃±5℃(TSW1)	90℃±5℃(TSW1)
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	Compliance to EN55011,EN55022 (CISPR22) Class B, EN61000-3-2,-3		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A		
OTHERS	MTBF	136.8Khrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	65.5*125.2*100mm (W*H*D)		
	PACKING	0.79Kg; 20pcs/16.5Kg/1.29CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0 1uf & 47uf parallel capacitor 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.			

■ Mechanical Specification

Case No. 921A Unit:mm



Terminal Pin No. Assignment (TB1)

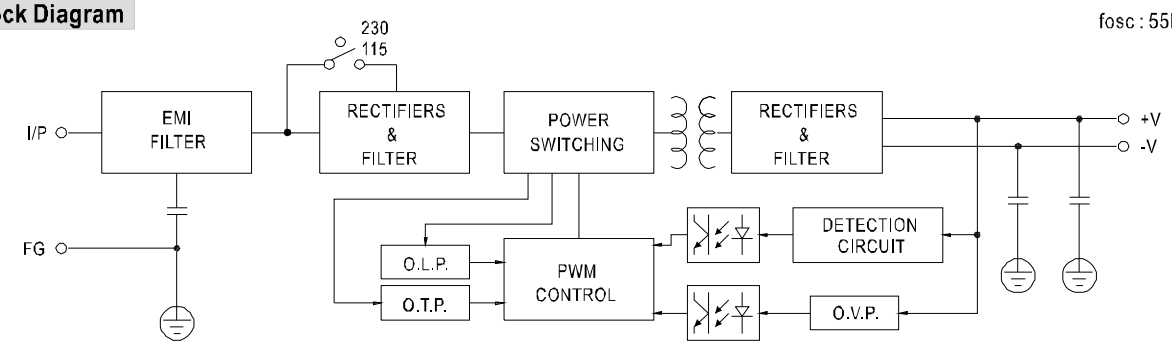
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

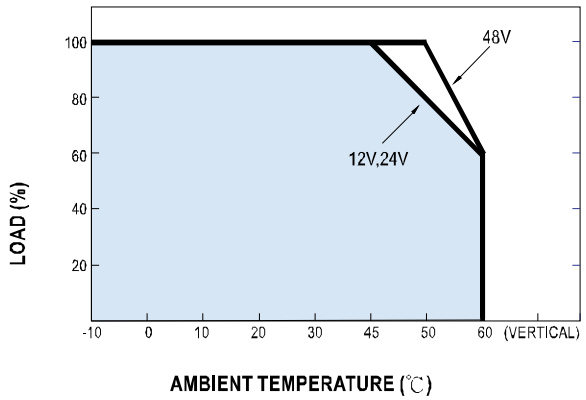
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

■ Block Diagram

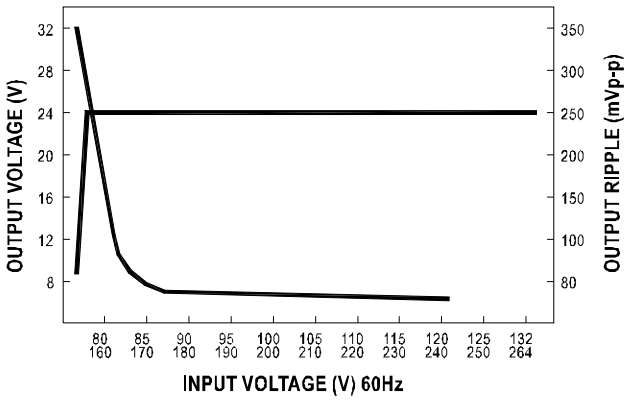
fosc : 55KHz



■ Derating Curve



■ Static Characteristics (24V)



NIETZ 240W Single Output Industrial DIN RAIL Power Supply DRP-240 series

Features :

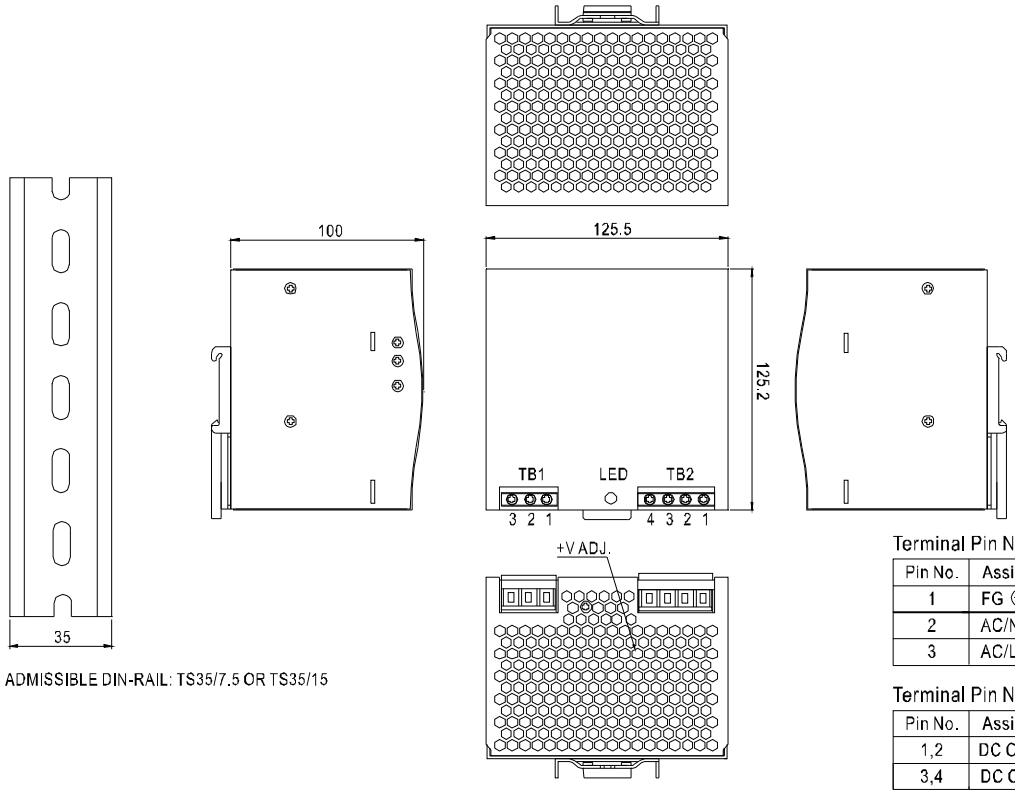
- Universal AC input / Full range
- Built in active PFC function
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at 100KHz

SPECIFICATION

MODEL		DRP-240-24	DRP-240-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 40ms/230VAC 800ms, 40ms/115VAC at full load	
	HOLD UP TIME (Typ.)	24ms/230VAC 24ms/115VAC at full load	
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC 120 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	0.96/230VAC 0.99/115VAC at full load	
	EFFICIENCY (Typ.)	84%	85%
	AC CURRENT (Typ.)	2.8A/115VAC 1.4A/230VAC	
	INRUSH CURRENT (Typ.)	COLD START 27A/115VAC 45A/230VAC	
	LEAKAGE CURRENT	<3.5mA / 240VAC	
PROTECTION	OVERLOAD	105 ~ 150% rated output power	
		Protection type : Constant current limiting, recovers automatically after fault condition is removed	
	OVER VOLTAGE	30 ~ 36V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover	
	OVER TEMPERATURE	100℃±5℃ (TSW1)detect on heat sink of power transistor	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-10 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC	
	EMC EMISSION	Compliance to EN55011,EN55022 (CISPR22) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A	
OTHERS	MTBF	289.9Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	125.5*125.2*100mm (W*H*D)	
	PACKING	1.2Kg; 12pcs/15.5Kg/1.29CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Derating may be needed under low input voltages. Please check the derating curve for more details.		

■ Mechanical Specification

Case No. 922A Unit:mm



ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15

Terminal Pin Number Assignment (TB1)

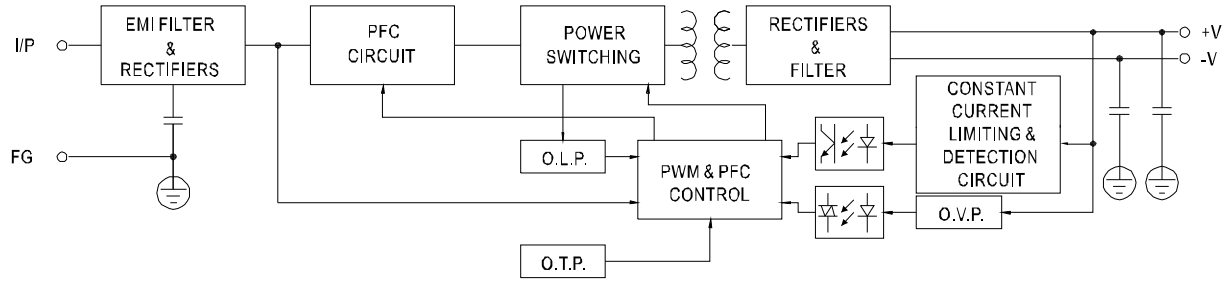
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin Number Assignment (TB2)

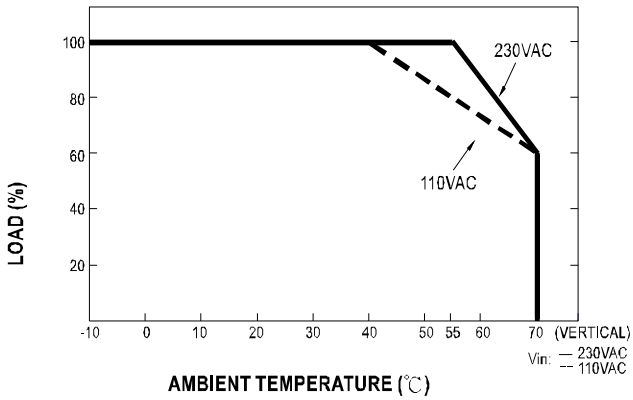
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

■ Block Diagram

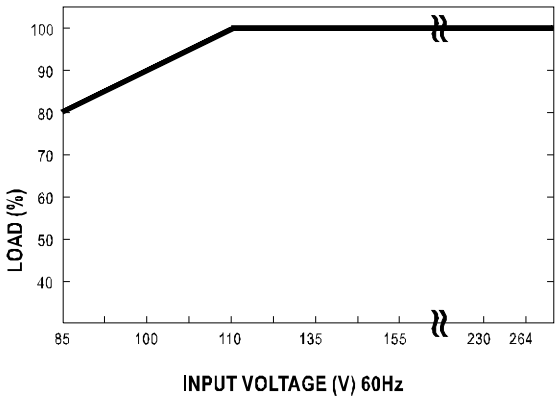
fosc : 100KHz



■ Derating Curve



■ Output derating VS input voltage



NIETZ 480W Single Output Industrial DIN RAIL with PFC Function DRP-480 series

Features :

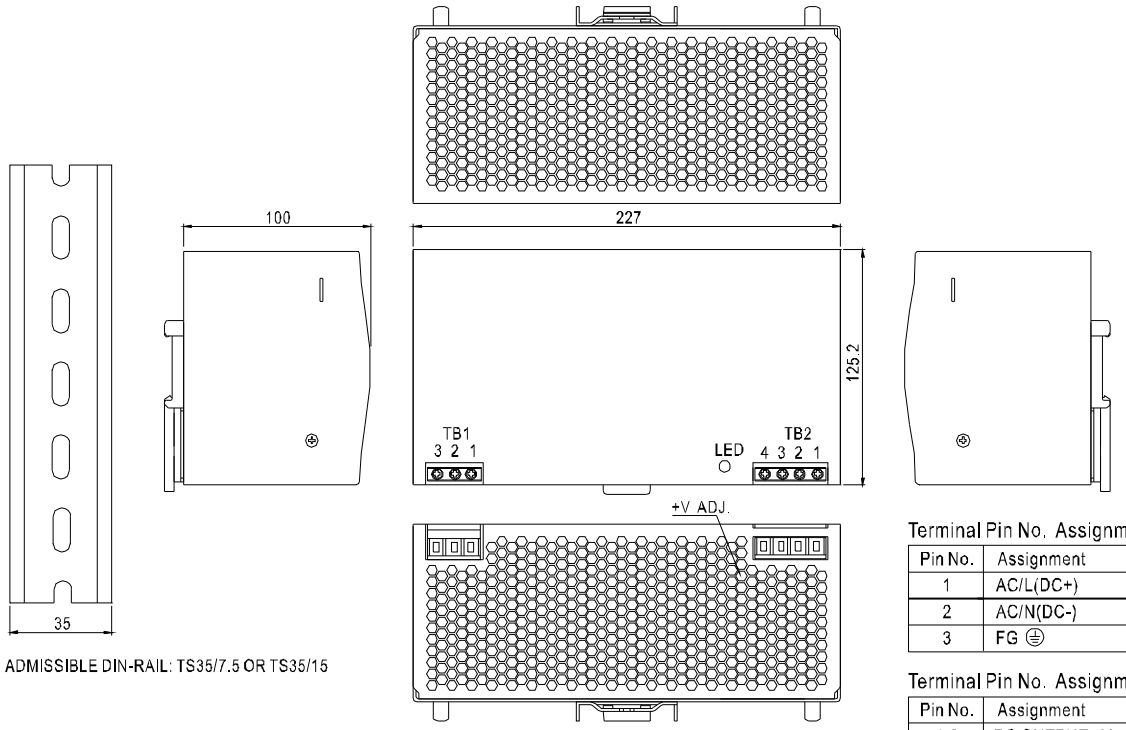
- Built-in passive PFC function compliance to EN61000-3-2
- High efficiency 89% and low dissipation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test

SPECIFICATION

MODEL		DRP-480-24	DRP-480-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 53V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	1200ms, 40ms/230VAC at full load	
	HOLD UP TIME (Typ.)	16ms/230VAC at full load	
INPUT	VOLTAGE RANGE	180 ~ 264VAC 250 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	≧0.7	
	EFFICIENCY (Typ.)	89%	
	AC CURRENT (Typ.)	4A/230VAC	
	INRUSH CURRENT (Typ.)	COLD START 40A/230VAC	
	LEAKAGE CURRENT	<3.5mA / 240VAC	
PROTECTION	OVERLOAD	105 ~ 150% rated output power	
		Protection type : Constant current limiting, recovers automatically after fault condition is removed	
	OVER VOLTAGE	30 ~ 36V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover	
	OVER TEMPERATURE	100℃±5℃ (TSW : detect on heatsink of power switch)	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH	
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61000-6-2 (EN50082-2), heavy industry level, criteria A	
OTHERS	MTBF	180.9Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	227*125.2*100mm (W*H*D)	
	PACKING	2.4Kg; 6pcs/15Kg/1.75CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.		

■ Mechanical Specification

Case No.930 Unit:mm



ADMISSIBLE DIN-RAIL: TS35/7.5 OR TS35/15

Terminal Pin No. Assignment (TB1)

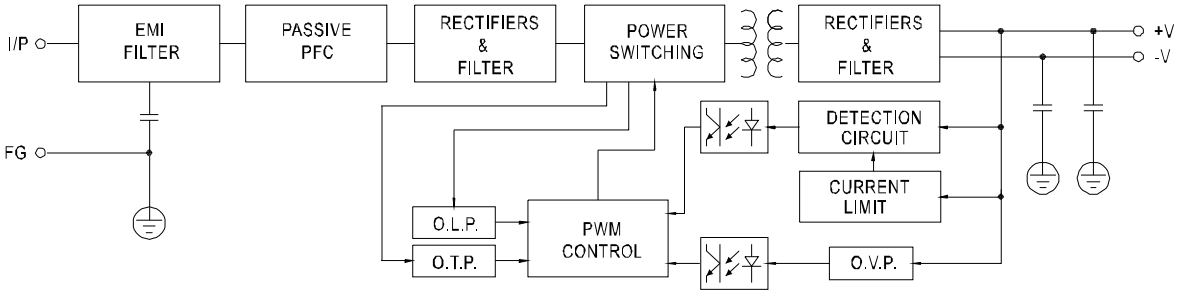
Pin No.	Assignment
1	AC/L(DC+)
2	AC/N(DC-)
3	FG ⏚

Terminal Pin No. Assignment (TB2)

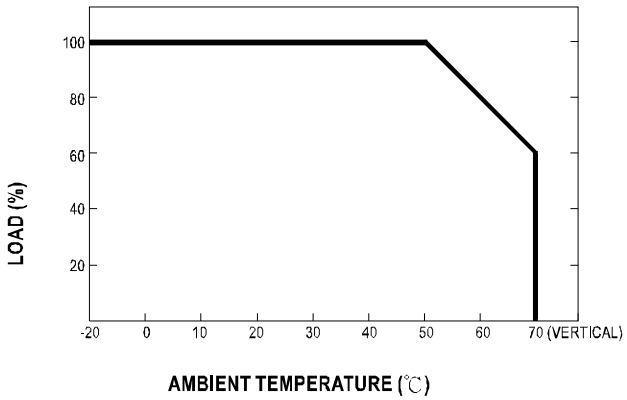
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V

■ Block Diagram

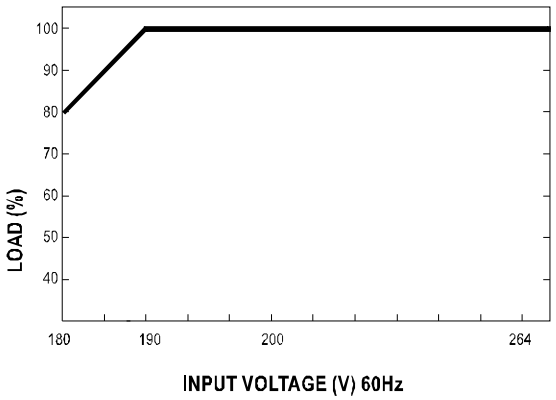
fosc : 70KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 100W Single Output Switching Power Supply HLG-100 series

■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 93.5%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

HLG-100-20 [A] Blank : IP67 rated. Cable for I/O connection.
A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.
D (option) : IP67 rated. Timer dimming function, contact NIETZ for details

SPECIFICATION

MODEL		HLG-100-20☐	HLG-100-24☐	HLG-100-30☐	HLG-100-36☐	HLG-100-42☐	HLG-100-48☐	HLG-100-54☐
OUTPUT	DC VOLTAGE	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	4.8A	4A	3.2A	2.65A	2.28A	2A	1.77A
	RATED POWER	96W	96W	96W	95.4W	95.76W	96W	95.58W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	17 ~ 22V	22 ~ 27V	27 ~ 33V	33 ~ 40V	38 ~ 46V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer or through output cable						
		3 ~ 4.8A	2.5 ~ 4A	2 ~ 3.2A	1.65 ~ 2.65A	1.4 ~ 2.28A	1.25 ~ 2A	1.1 ~ 1.77A
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	2500ms, 50ms at full load 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load 230VAC / 115VAC						
	HOLD UP TIME (Typ.)	16ms at full load 230VAC /115VAC						
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%	93.5%
	AC CURRENT (Typ.)	1.2A / 115VAC 0.55A / 230VAC						
	INRUSH CURRENT (Typ.)	COLD START 75A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 106%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed						
	OVER VOLTAGE	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery						
	OVER TEMPERATURE	100℃±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS Note.6	UL8750, EN61347-1, EN61347-2-13 independent, J61347-1, J61347-2-13, IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧60% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, heavy industry level (surge 4KV), criteria A						
OTHERS	MTBF	192.2Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	220*68*38.8mm (L*W*H)						
	PACKING	1.12Kg; 12pcs/14.4Kg/0.74CUFT						

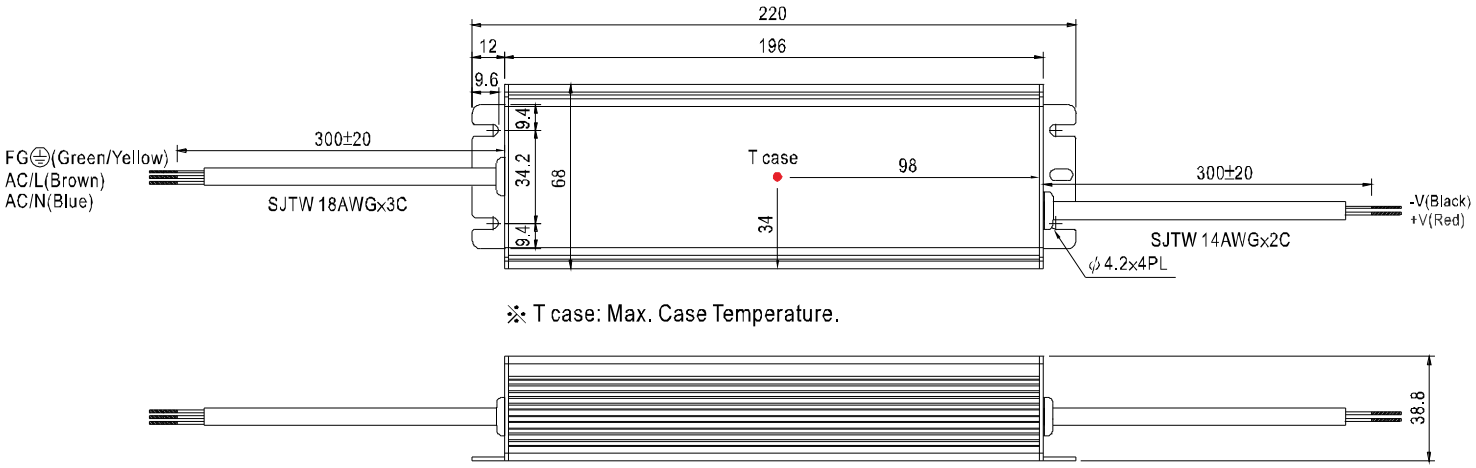
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Type A only.
6. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
9. Refer to warranty statement.

■ Mechanical Specification

Case No.994A Unit:mm

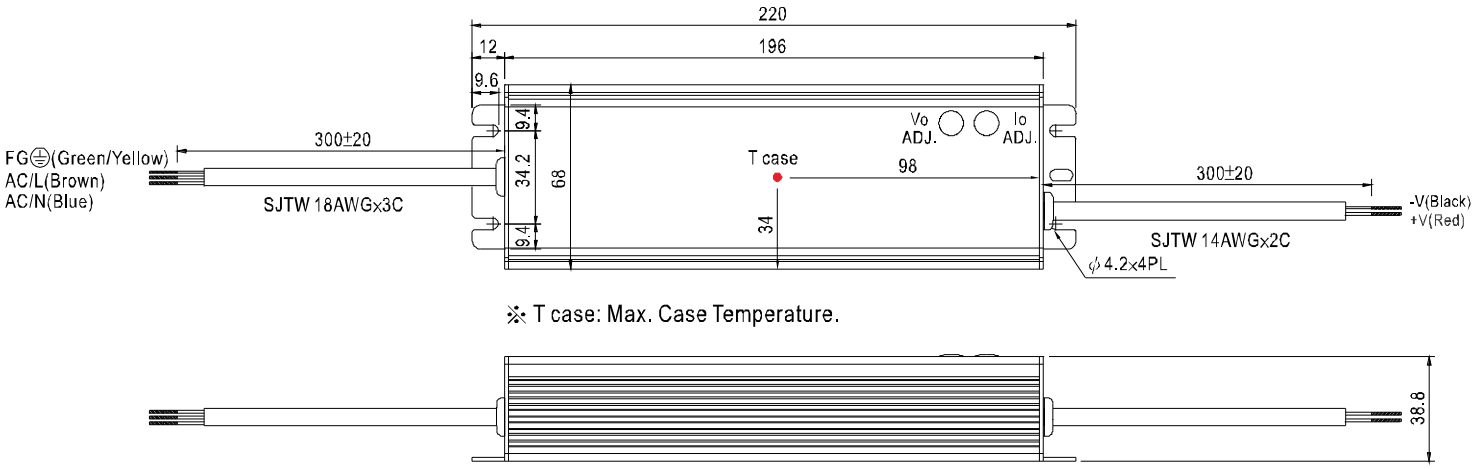
Blank:(HLG-100)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

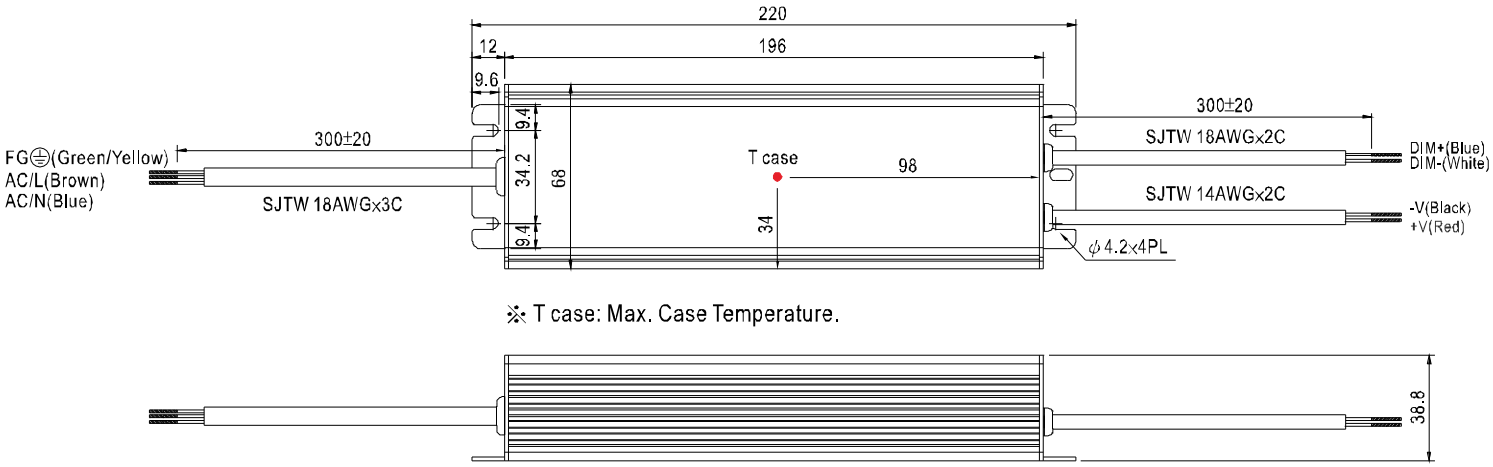
A Type:(HLG-100-_A)



※ T case: Max. Case Temperature.

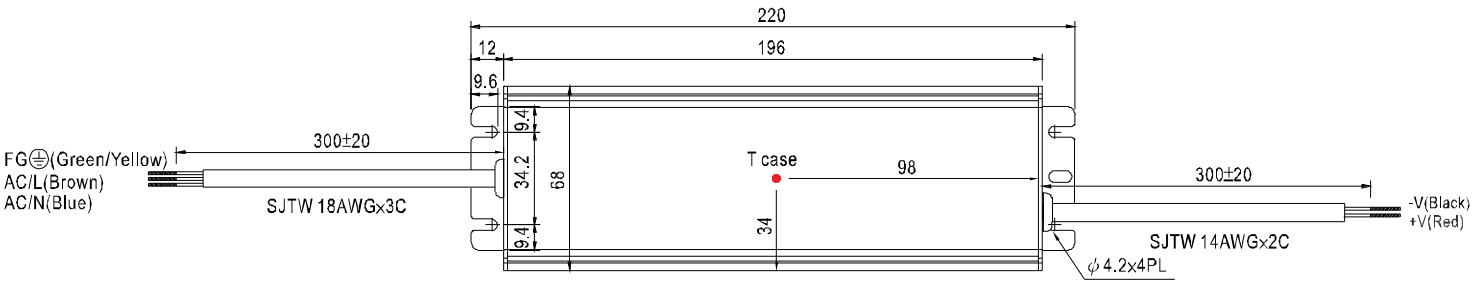
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-100-_B)

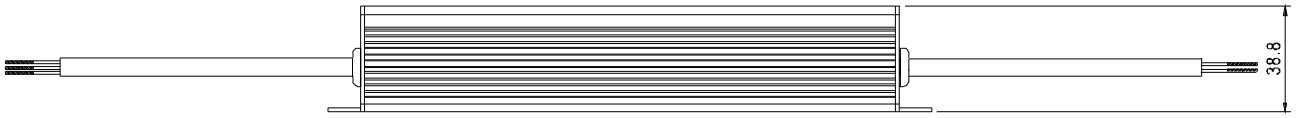


※ T case: Max. Case Temperature.

D Type(option):(HLG-100-_D)



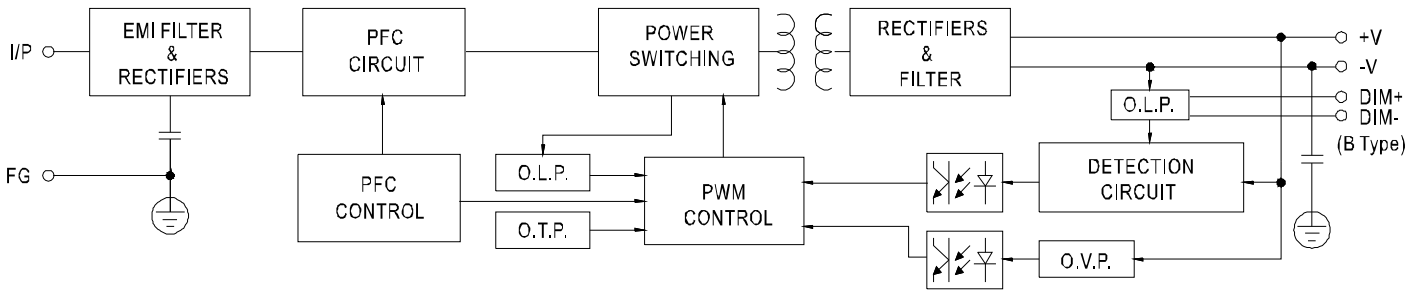
※ T case: Max. Case Temperature.



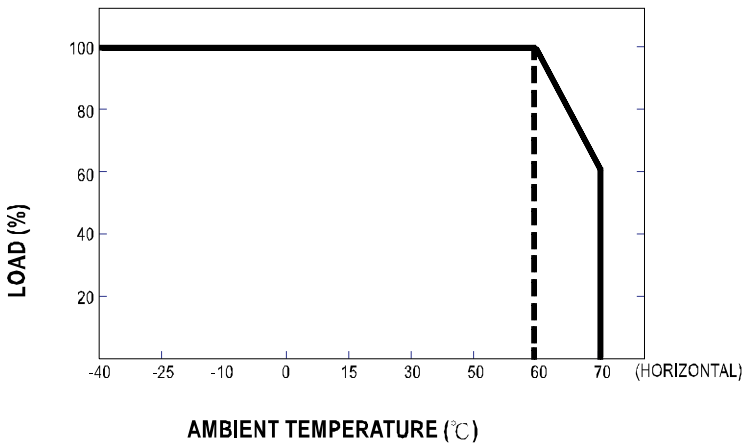
※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

■ Block Diagram

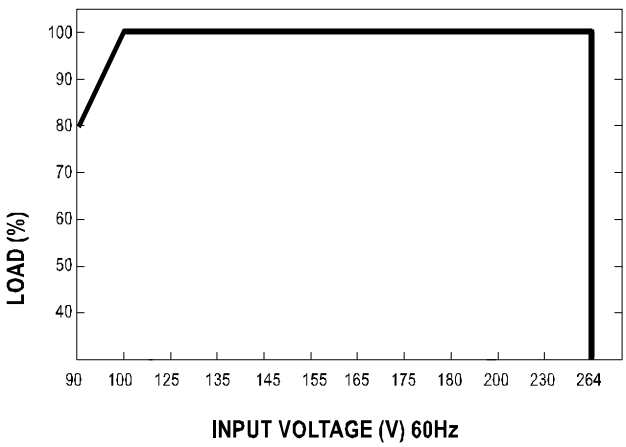
Fosc : 100KHz



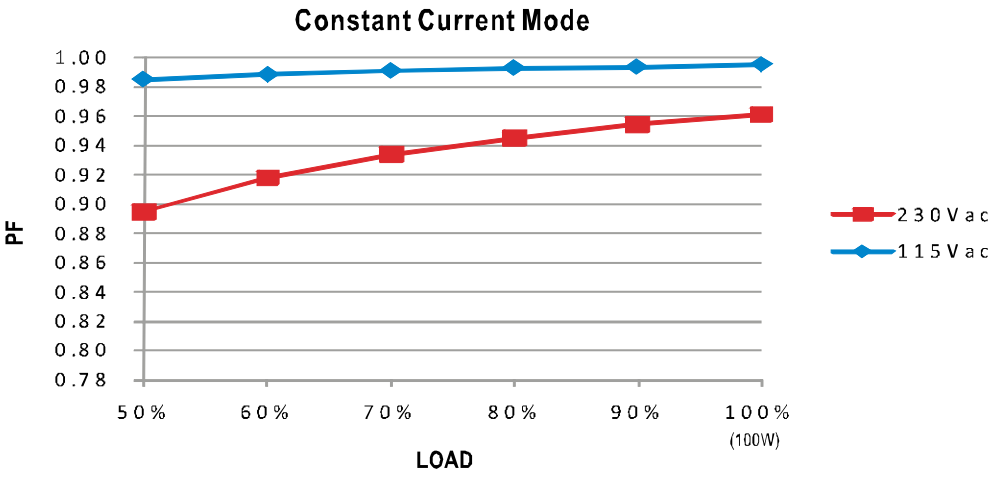
■ Derating Curve



■ Static Characteristics

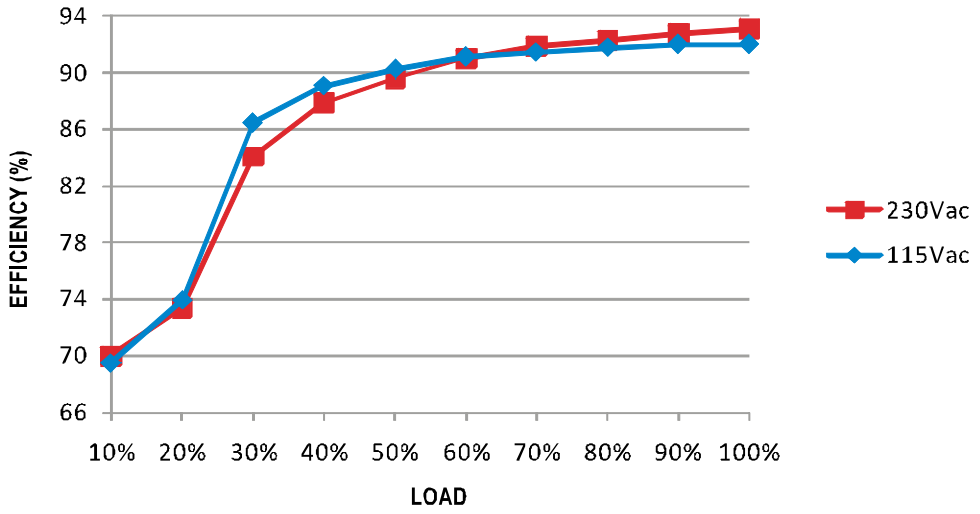


■ Power Factor Characteristic



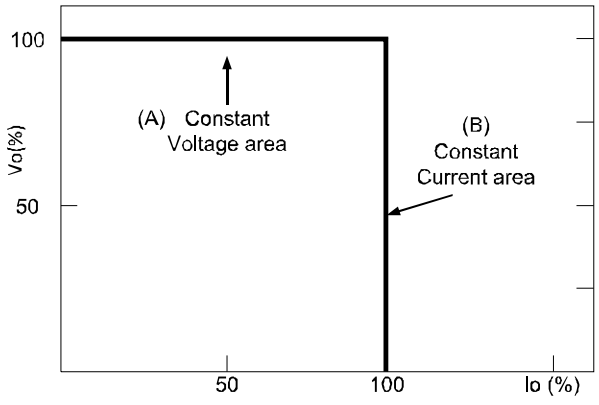
■ EFFICIENCY vs LOAD (48V Model)

HLG-100 series possess superior working efficiency that up to 93.5% can be reached in field applications.



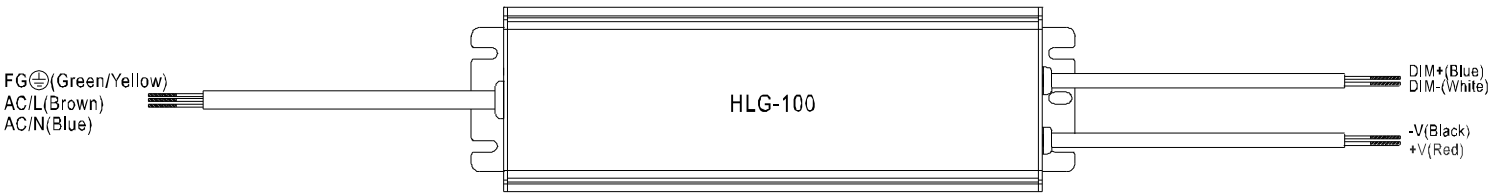
■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

■ DIMMING OPERATION



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

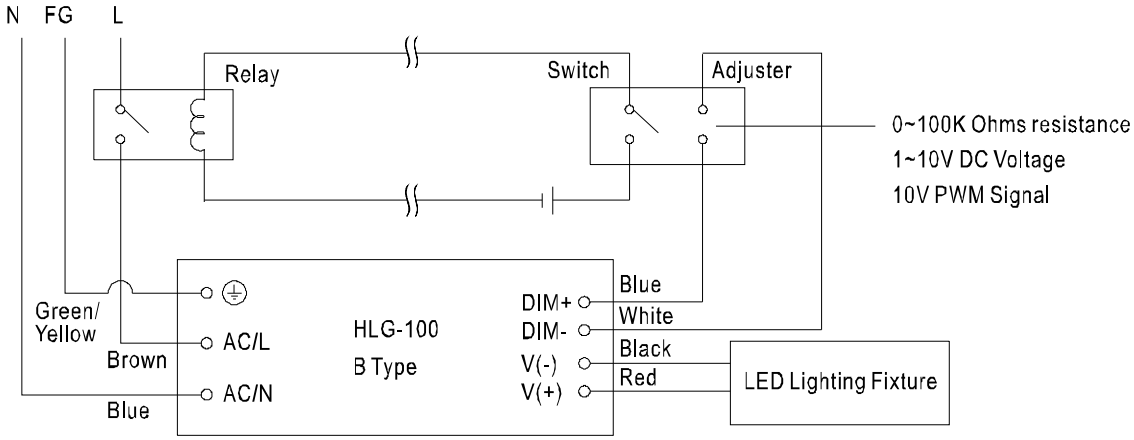
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100HZ ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :



Using a switch and relay can turn ON/OFF the lighting fixture.

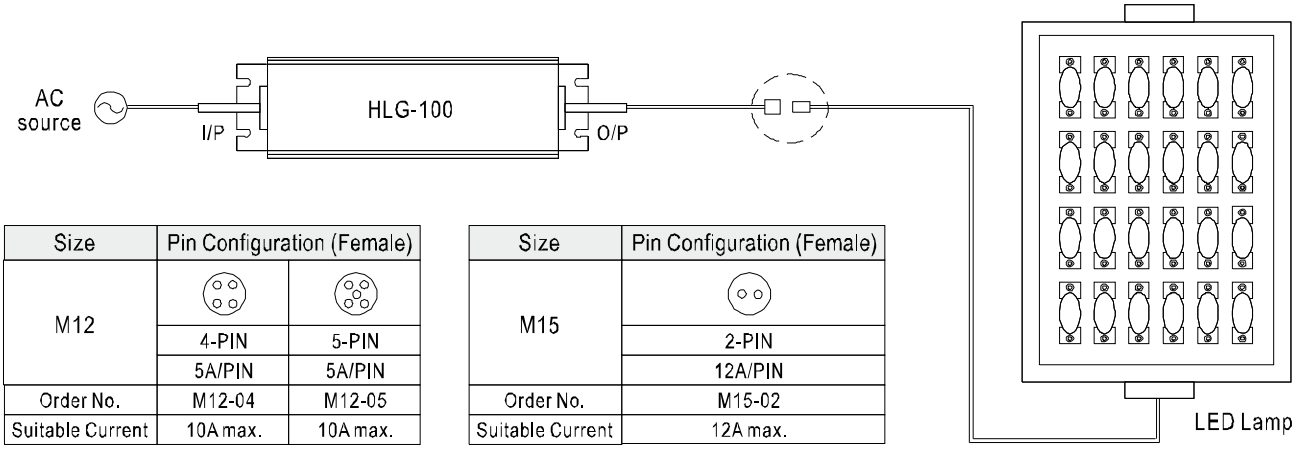
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

■ WATERPROOF CONNECTION

◎ Waterproof connector

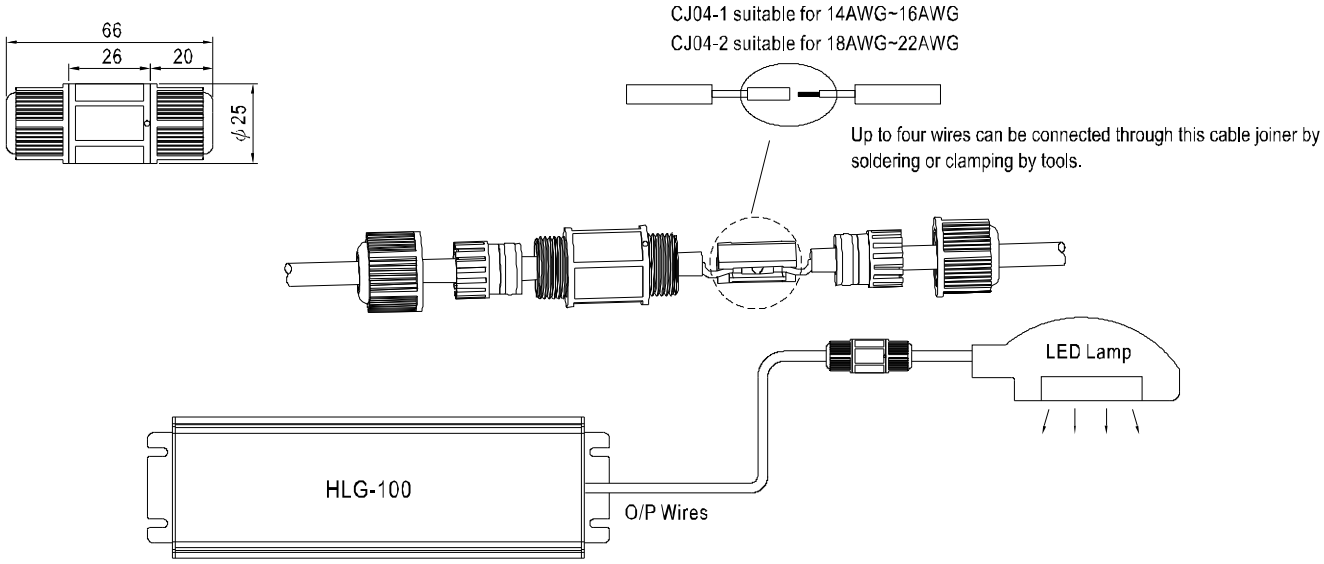
Waterproof connector can be assembled on the output cable of HLG-100 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

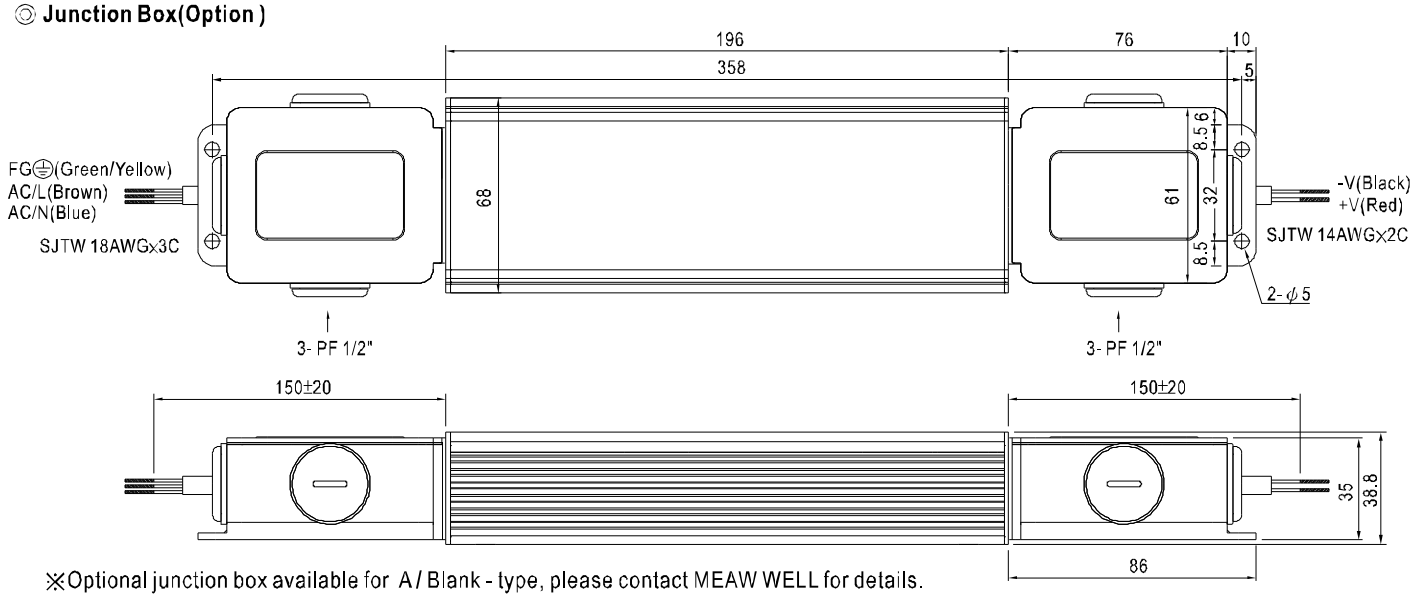
Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

◎ **Cable Joiner**



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.

◎ **Junction Box(Option)**



※Optional junction box available for A / Blank - type, please contact MEAW WELL for details.

NIETZ 120W Single Output Switching Power Supply HLG-120 series

■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 94%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

HLG-120-12 [A] Blank : IP67 rated. Cable for I/O connection.
A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.
D (option) : IP67 rated. Timer dimming function, contact NIETZ for details.

SPECIFICATION

MODEL		HLG-120-12□	HLG-120-15□	HLG-120-20□	HLG-120-24□	HLG-120-30□	HLG-120-36□	HLG-120-42□	HLG-120-48□	HLG-120-54□
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	10A	8A	6A	5A	4A	3.4A	2.9A	2.5A	2.3A
	RATED POWER	120W	120W	120W	120W	120W	122.4W	121.8W	120W	124.2W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	17 ~ 22V	22 ~ 27V	27 ~ 33V	33 ~ 40V	38 ~ 46V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer or through output cable								
		5 ~ 10A	4 ~ 8A	3 ~ 6A	2.5 ~ 5A	2 ~ 4A	1.7 ~ 3.4A	1.4 ~ 2.9A	1.2 ~ 2.5A	1.1 ~ 2.3A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	2500ms, 50ms at full load 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load 230VAC / 115VAC								
	HOLD UP TIME (Typ.)	16ms at full load 230VAC / 115VAC								
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.)	92%	92%	93.5%	94%	94%	94%	94%	94%	94%
	AC CURRENT (Typ.)	1.4A / 115VAC 0.6A / 230VAC								
	INRUSH CURRENT (Typ.)	COLD START 75A/230VAC								
	LEAKAGE CURRENT	<0.75mA / 240VAC								
PROTECTION	OVER CURRENT	95 ~ 108%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery								
	OVER TEMPERATURE	85℃ ±10℃ (RTH2)								
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.6	UL8750, EN61347-1, EN61347-2-13 independent, J61347-1, J61347-2-13, IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥50% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, heavy industry level (surge 4KV), criteria A								
OTHERS	MTBF	192.2Khrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	220*68*38.8mm (L*W*H)								
	PACKING	1.12Kg; 12pcs/14.4Kg/0.74CUFT								

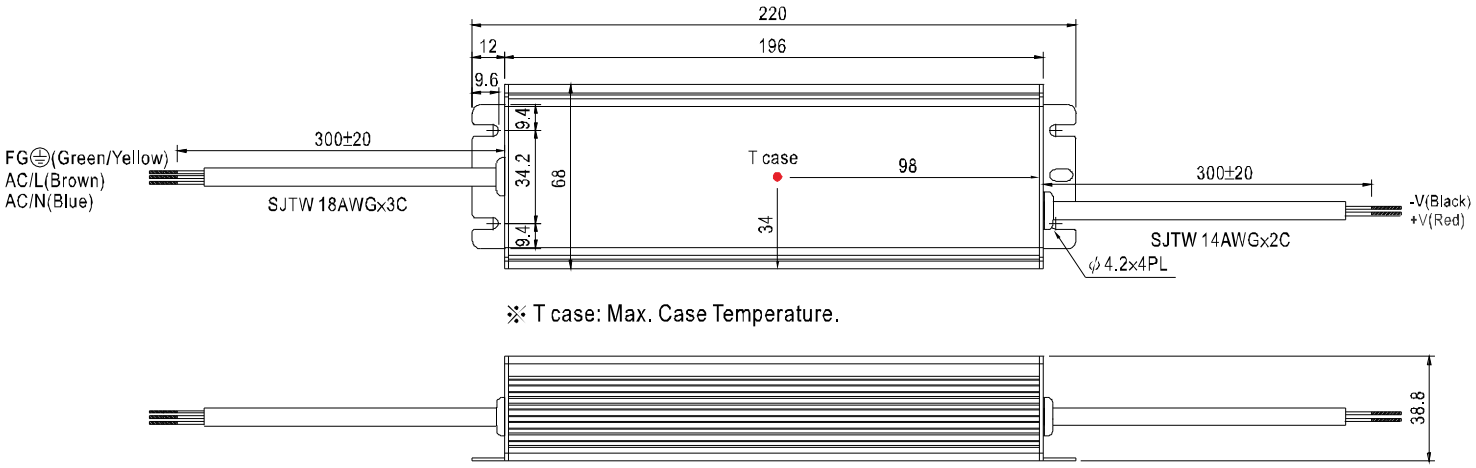
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Type A only.
6. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
9. Refer to warranty statement.

■ Mechanical Specification

Case No.994A Unit:mm

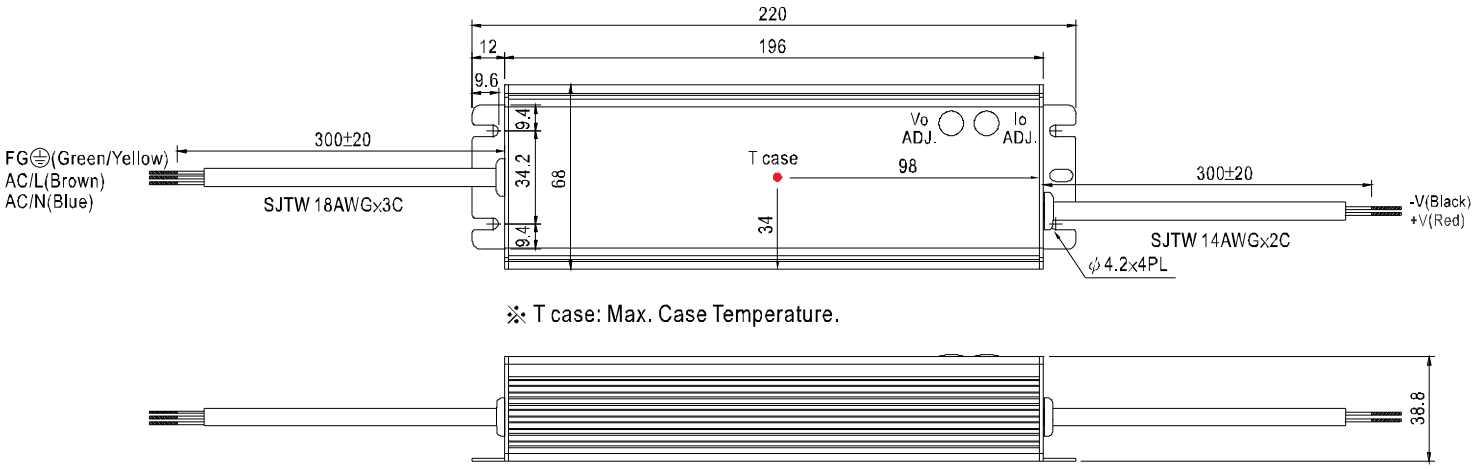
Blank:(HLG-120)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

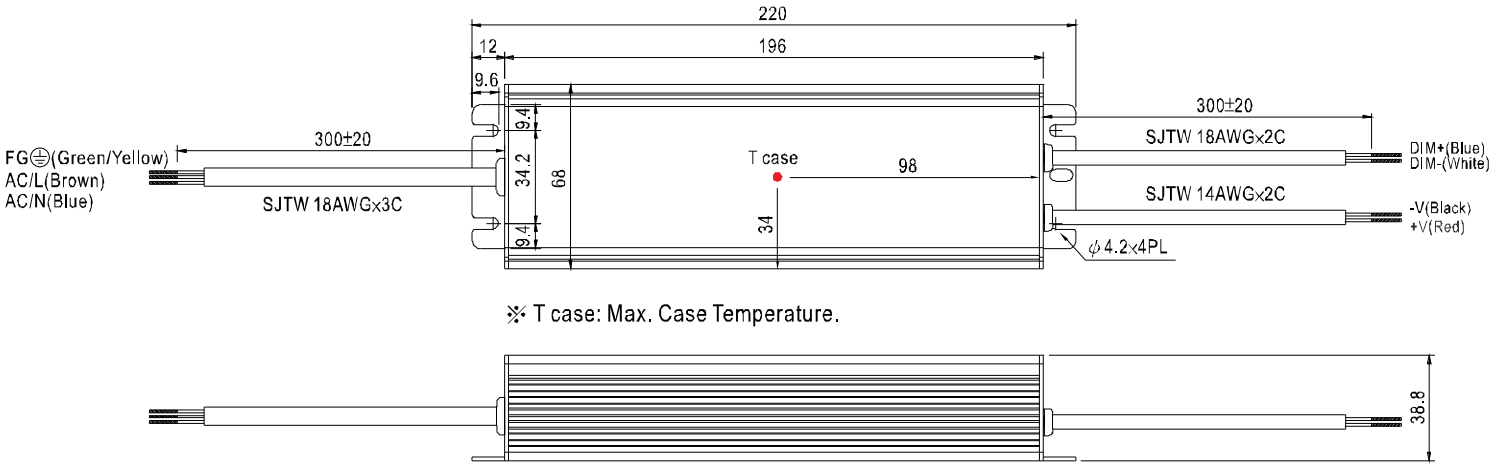
A Type:(HLG-120-_A)



※ T case: Max. Case Temperature.

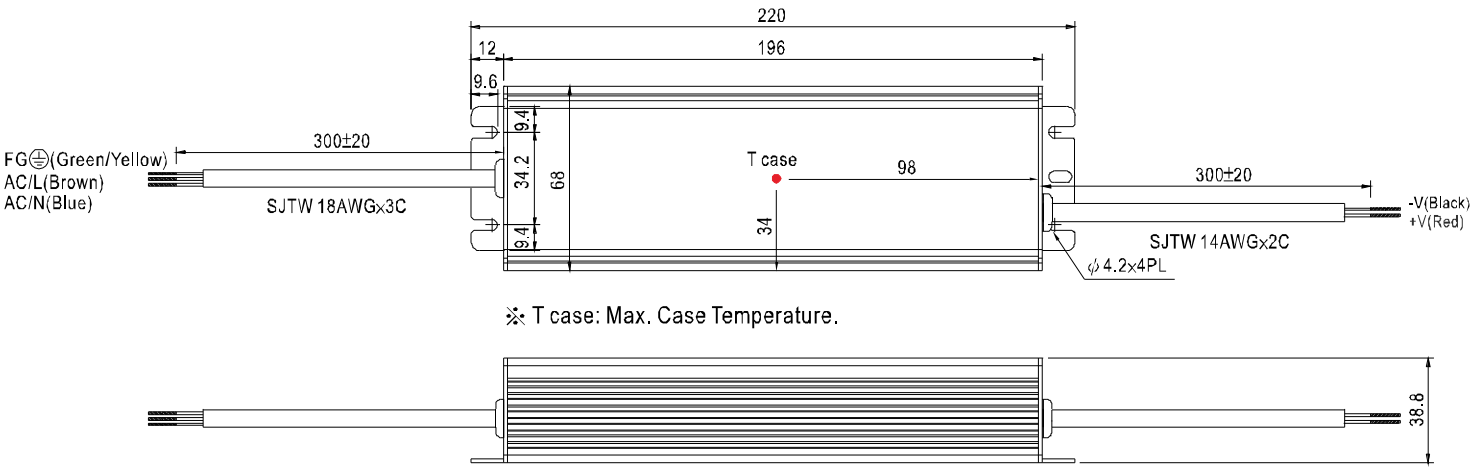
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-120-_B)



※ T case: Max. Case Temperature.

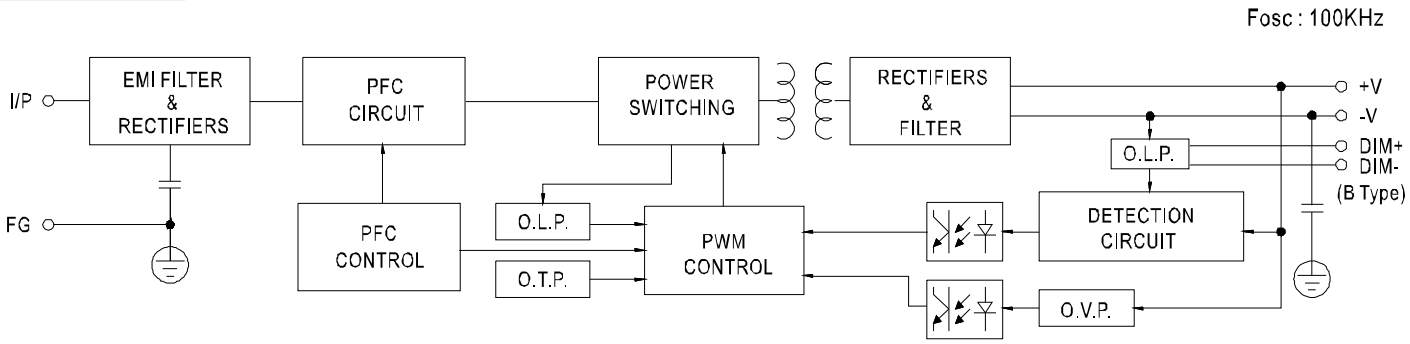
D Type(option):(HLG-120-_D)



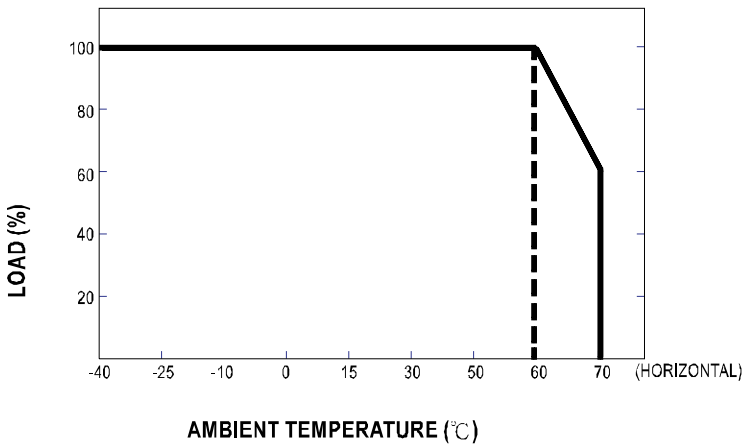
※ T case: Max. Case Temperature.

※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

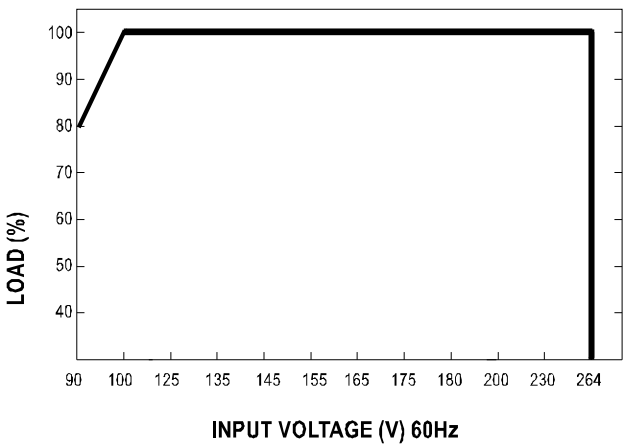
■ Block Diagram



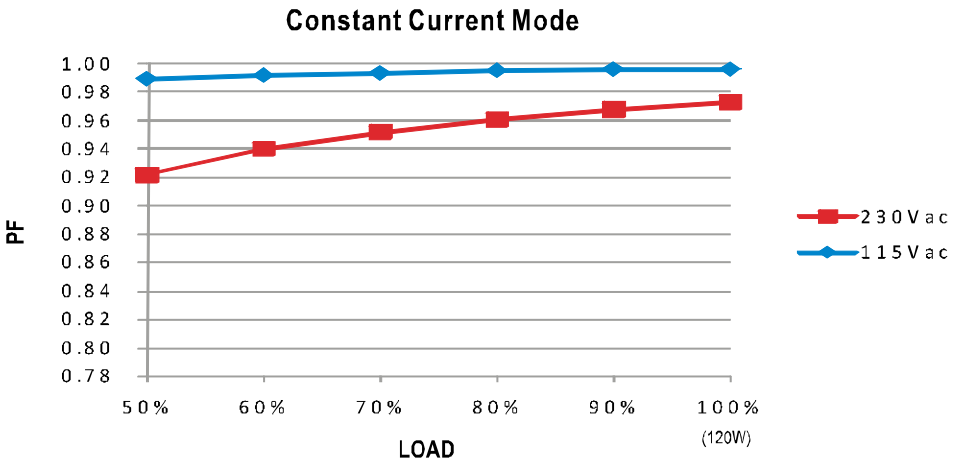
■ Derating Curve



■ Static Characteristics

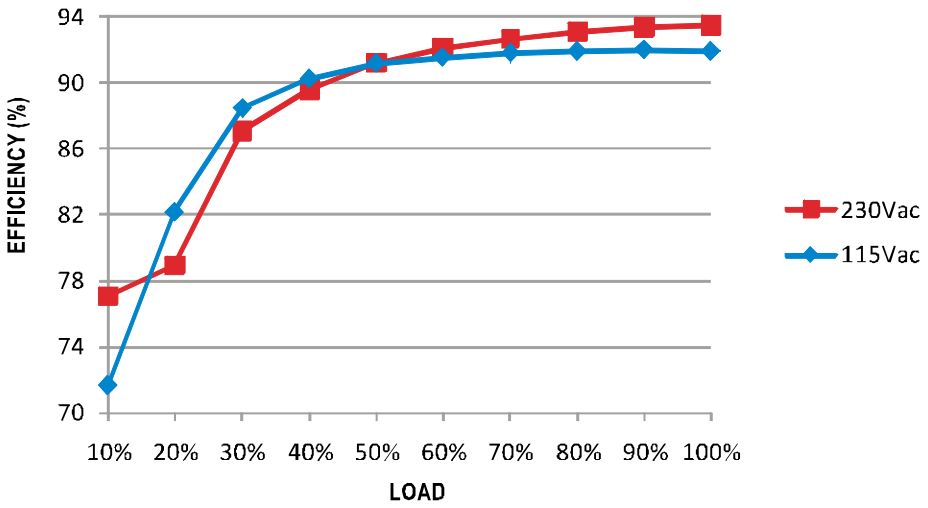


■ Power Factor Characteristic



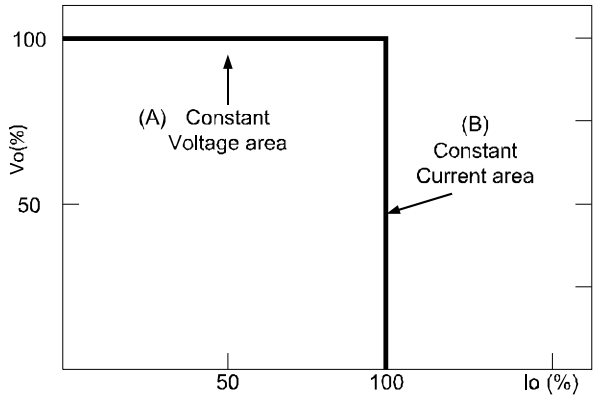
■ EFFICIENCY vs LOAD (48V Model)

HLG-120 series possess superior working efficiency that up to 94% can be reached in field applications.



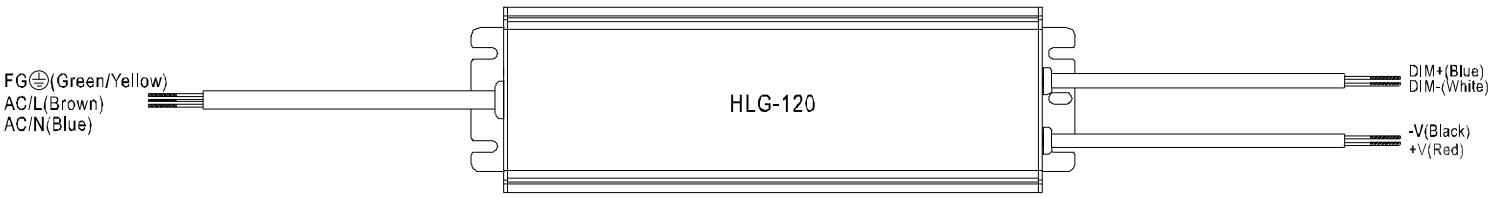
■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

■ DIMMING OPERATION



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

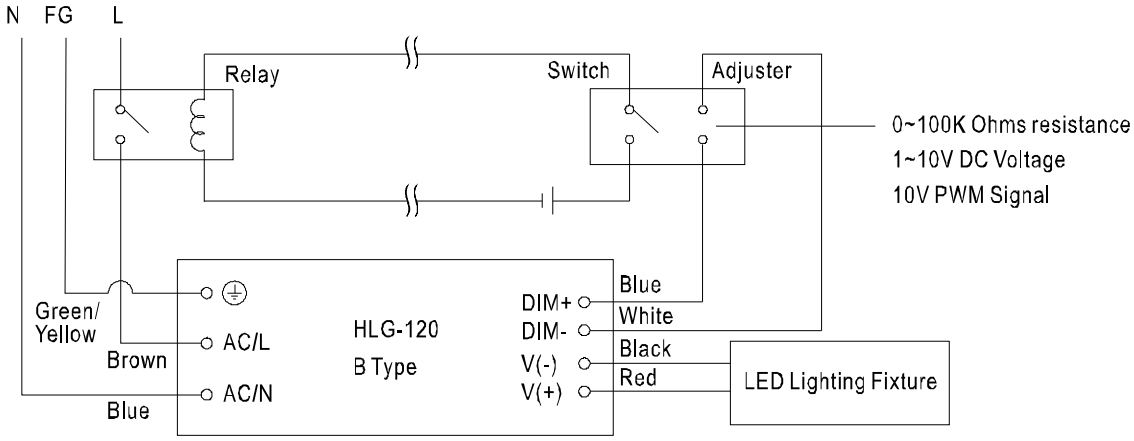
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100HZ ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :



Using a switch and relay can turn ON/OFF the lighting fixture.

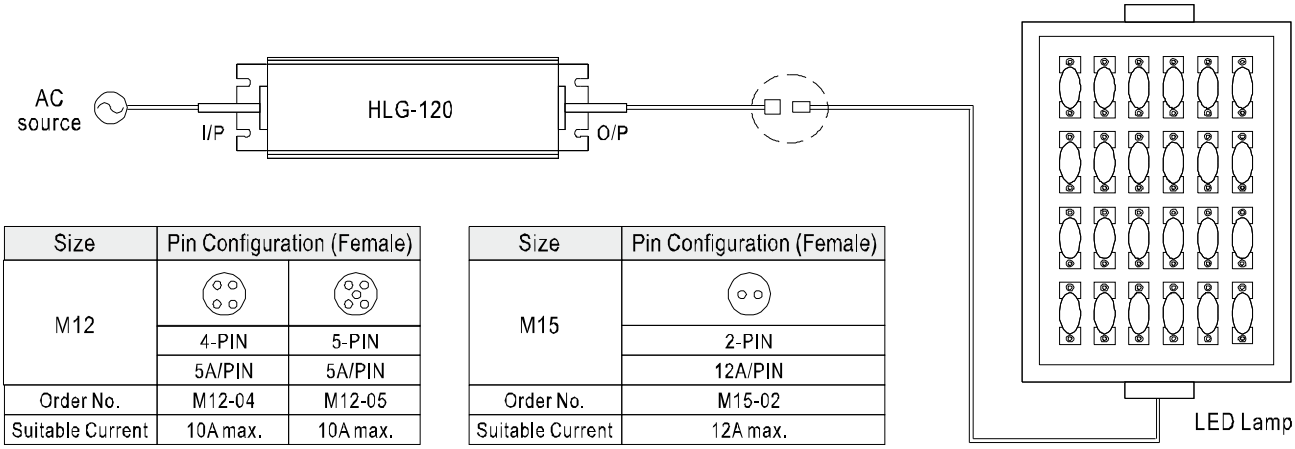
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

■ WATERPROOF CONNECTION

◎ Waterproof connector

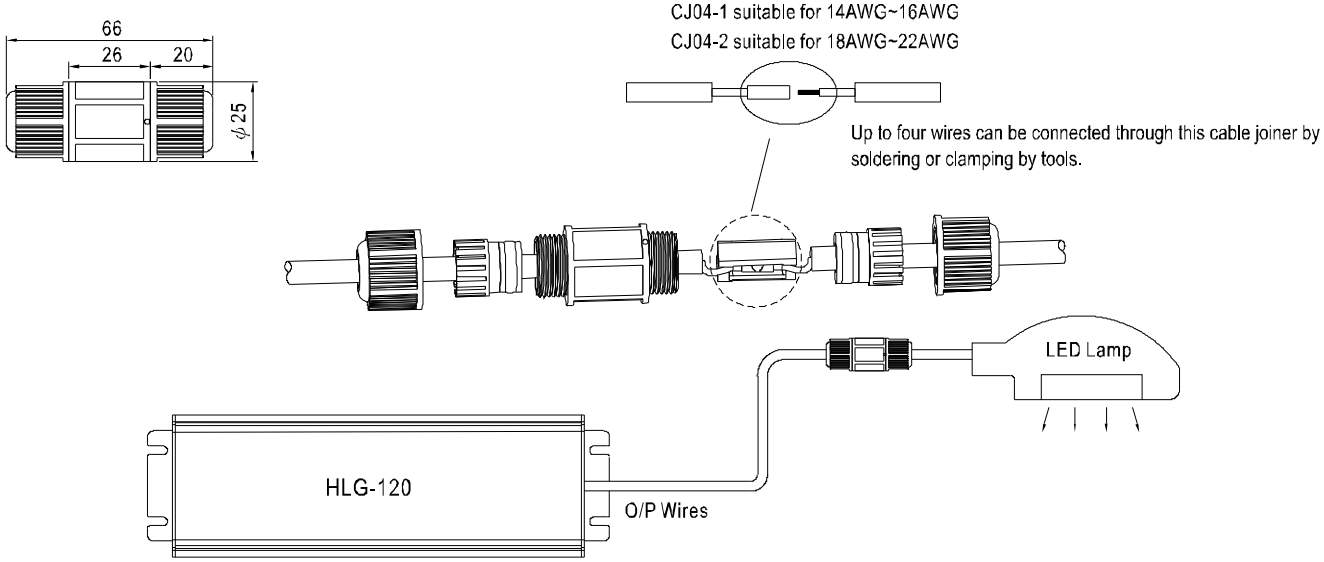
Waterproof connector can be assembled on the output cable of HLG-120 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

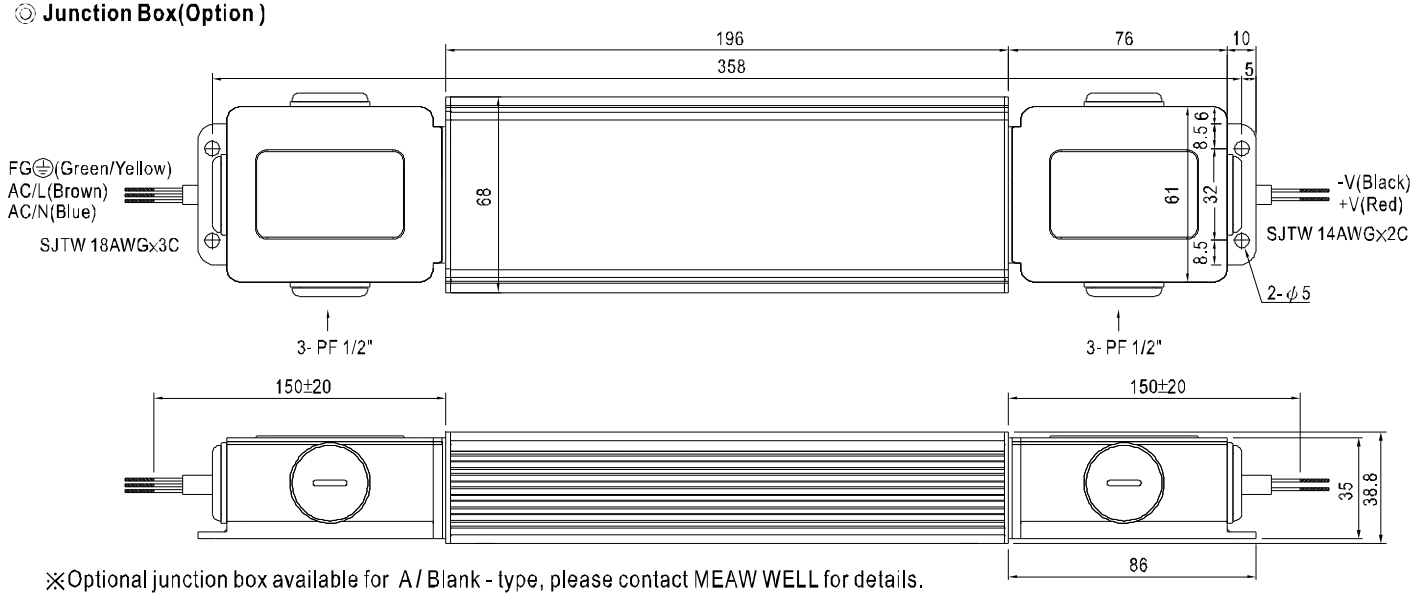
Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

◎ **Cable Joiner**



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.

◎ **Junction Box(Option)**



※Optional junction box available for A / Blank - type, please contact MEAW WELL for details.

NIETZ 150W Single Output Switching Power Supply HLG-150 series

Features :

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 94%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

HLG-150-12 [A] Blank : IP67 rated. Cable for I/O connection.
A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.
D (option) : IP67 rated. Timer dimming function, contact NIETZ for details.

SPECIFICATION

MODEL		HLG-150-12□	HLG-150-15□	HLG-150-20□	HLG-150-24□	HLG-150-30□	HLG-150-36□	HLG-150-42□	HLG-150-48□	HLG-150-54□
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	12.5A	10A	7.5A	6.3A	5A	4.2A	3.6A	3.2A	2.8A
	RATED POWER	150W	150W	150W	151.2W	150W	151.2W	151.2W	153.6W	151.2W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	17 ~ 22V	22 ~ 27V	27 ~ 33V	33 ~ 40V	38 ~ 46V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer or through output cable								
		7.5 ~ 12.5A	6 ~ 10A	4.5 ~ 7.5A	3.8 ~ 6.3A	3 ~ 5A	2.5 ~ 4.2A	2.16 ~ 3.6A	1.92 ~ 3.2A	1.68 ~ 2.8A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	2500ms, 80ms at full load 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load 230VAC / 115VAC								
	HOLD UP TIME (Typ.)	16ms at full load 230VAC / 115VAC								
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.)	92%	92.5%	93%	93.5%	93.5%	93.5%	94%	94%	94%
	AC CURRENT (Typ.)	1.7A / 115VAC 0.75A / 230VAC								
	INRUSH CURRENT (Typ.)	COLD START 75A/230VAC								
	LEAKAGE CURRENT	<0.75mA / 240VAC								
PROTECTION	OVER CURRENT	95 ~ 108%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery								
	OVER TEMPERATURE	100℃ ±10℃ (RTH2)								
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.6	UL8750, EN61347-1, EN61347-2-13 independent, J61347-1, J61347-2-13, IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, heavy industry level (surge 4KV), criteria A								
OTHERS	MTBF	192.2Khrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	228*68*38.8mm (L*W*H)								
	PACKING	1.15Kg; 12pcs/14.8Kg/0.74CUFT								

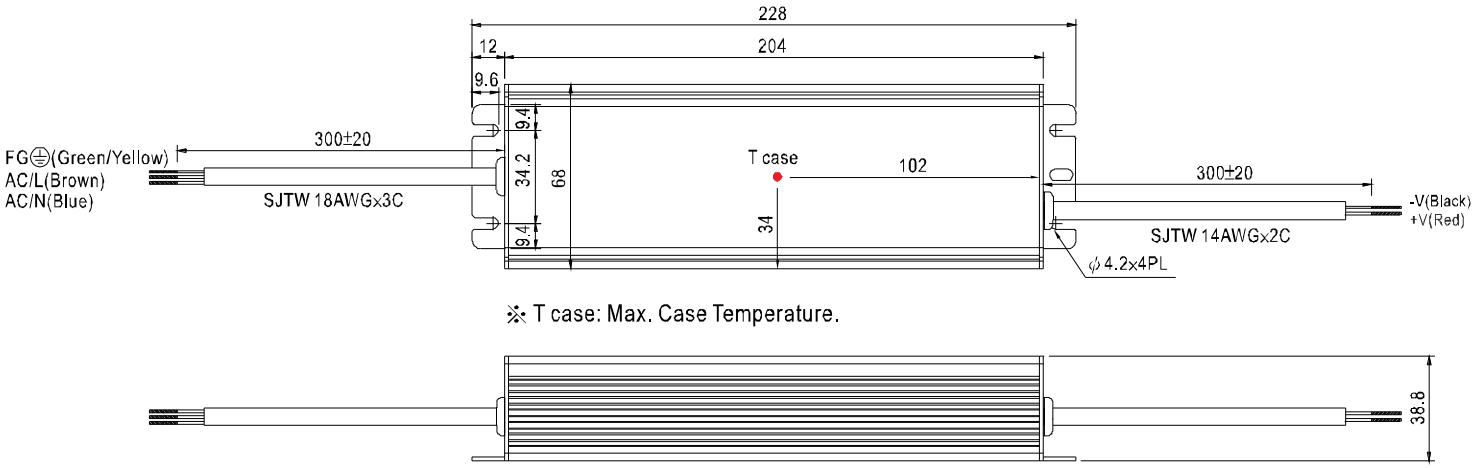
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Type A only.
6. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
9. Refer to warranty statement.

■ Mechanical Specification

Case No.994D Unit:mm

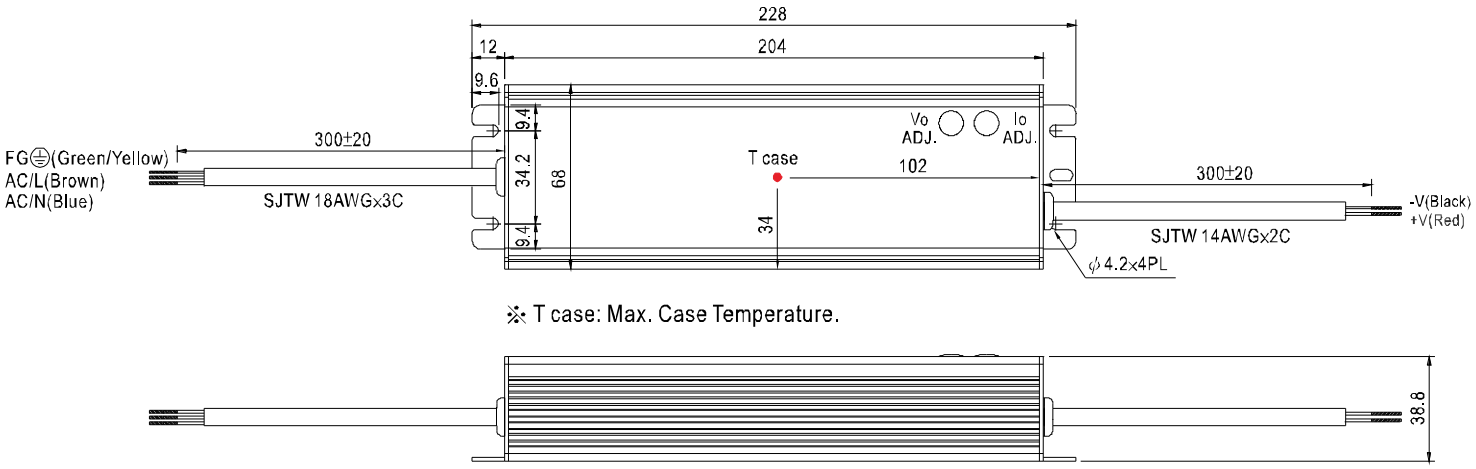
Blank:(HLG-150)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

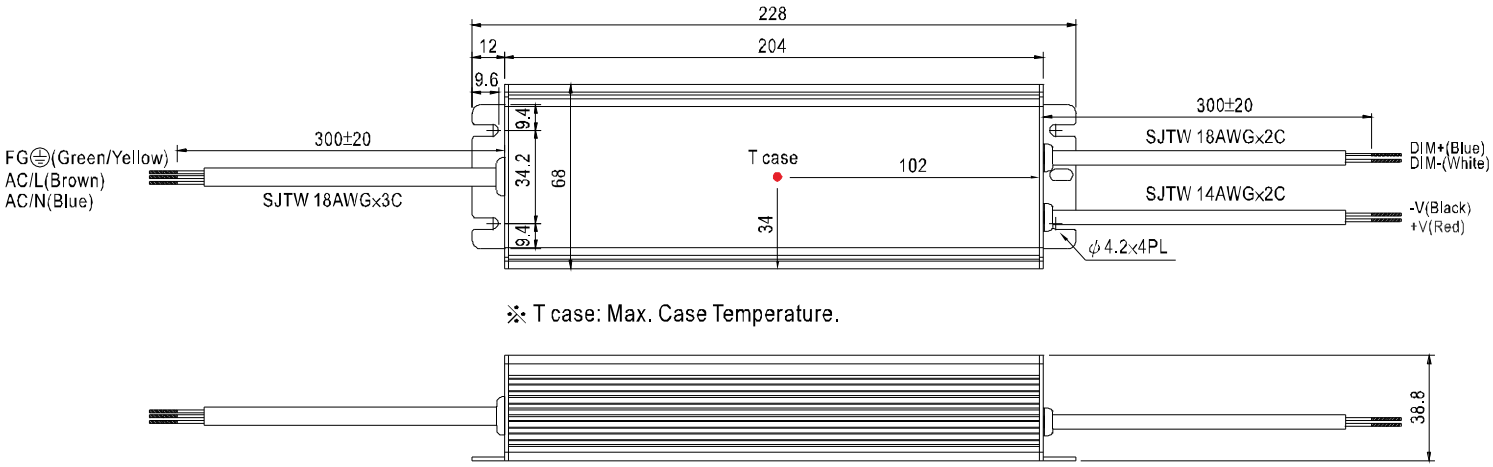
A Type:(HLG-150-_A)



※ T case: Max. Case Temperature.

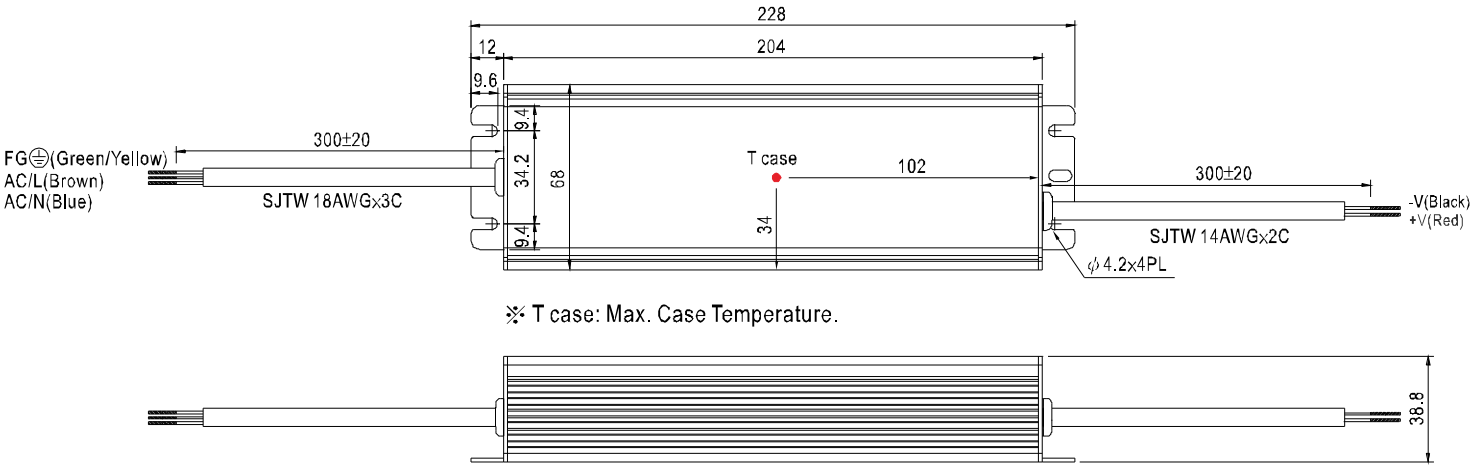
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-150-_B)



※ T case: Max. Case Temperature.

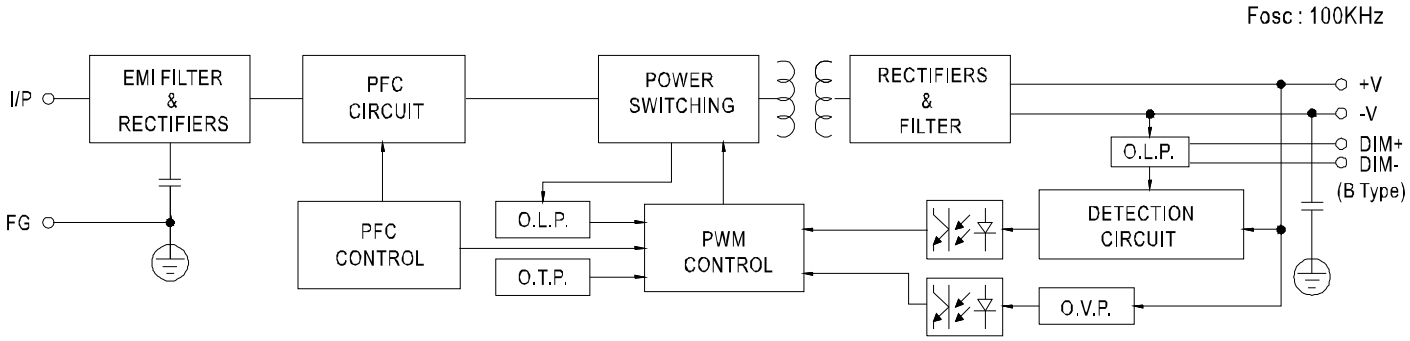
D Type(option):(HLG-150-_D)



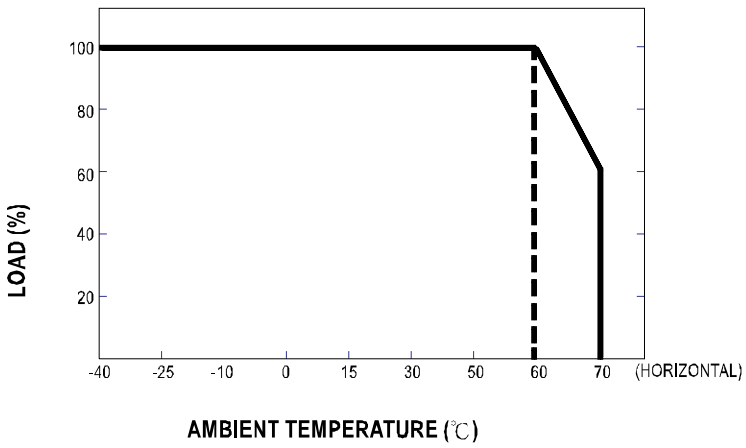
※ T case: Max. Case Temperature.

※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

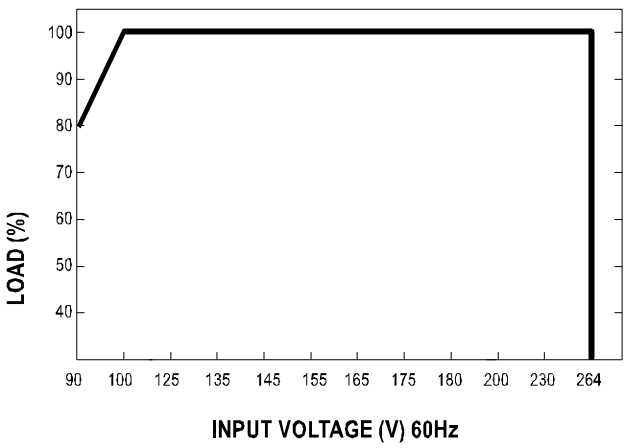
■ Block Diagram



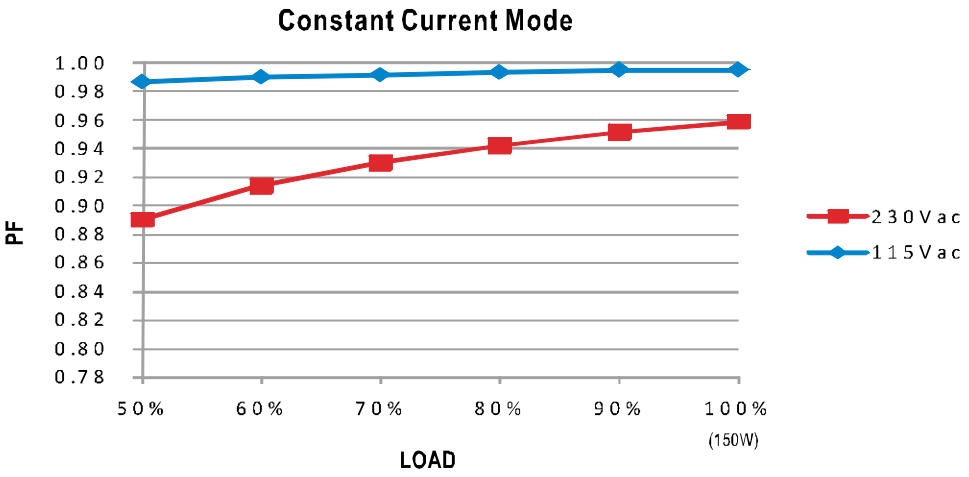
■ Derating Curve



■ Static Characteristics

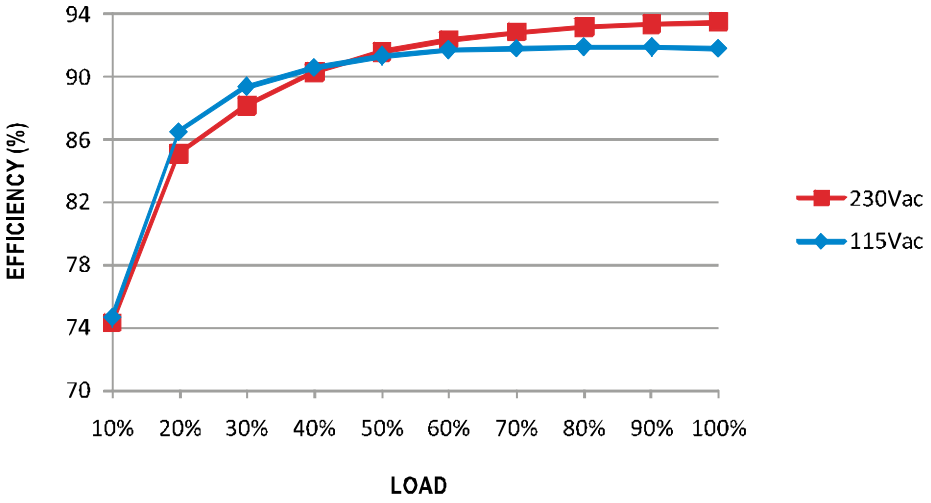


■ Power Factor Characteristic



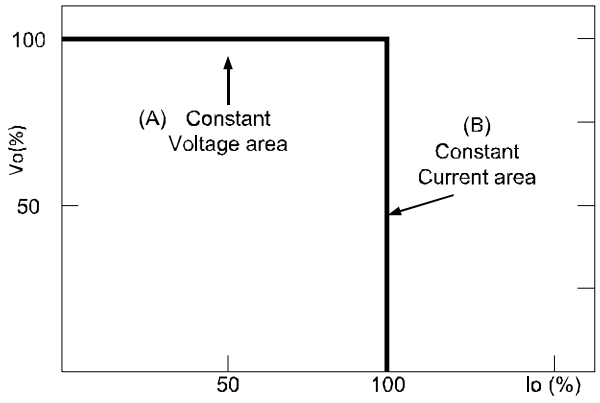
■ EFFICIENCY vs LOAD (48V Model)

HLG-150 series possess superior working efficiency that up to 94% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

■ DIMMING OPERATION

※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

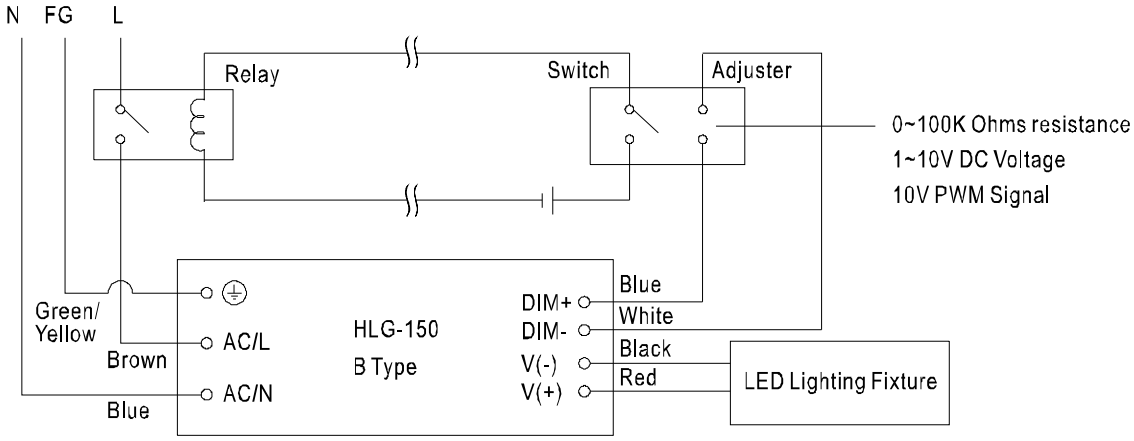
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100HZ ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :



Using a switch and relay can turn ON/OFF the lighting fixture.

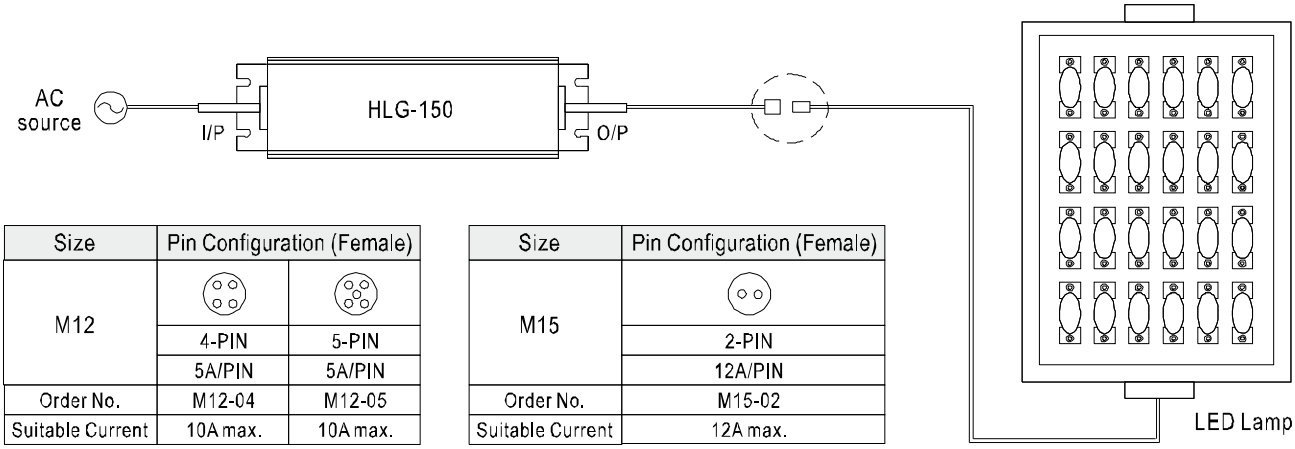
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

■ WATERPROOF CONNECTION

◎ Waterproof connector

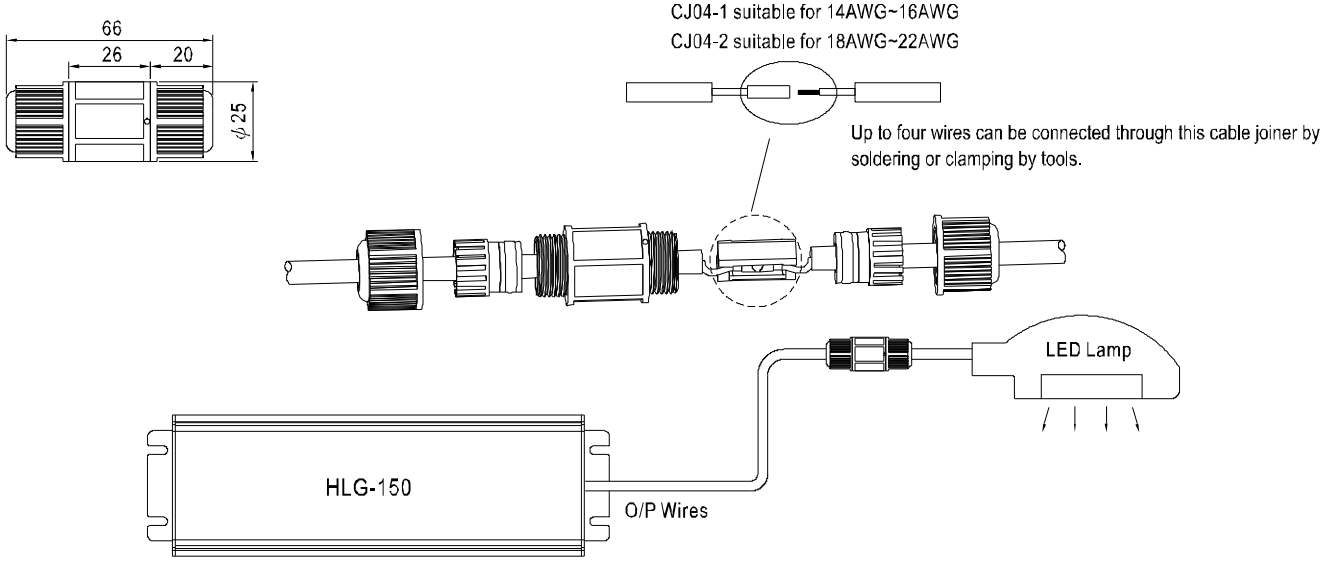
Waterproof connector can be assembled on the output cable of HLG-150 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

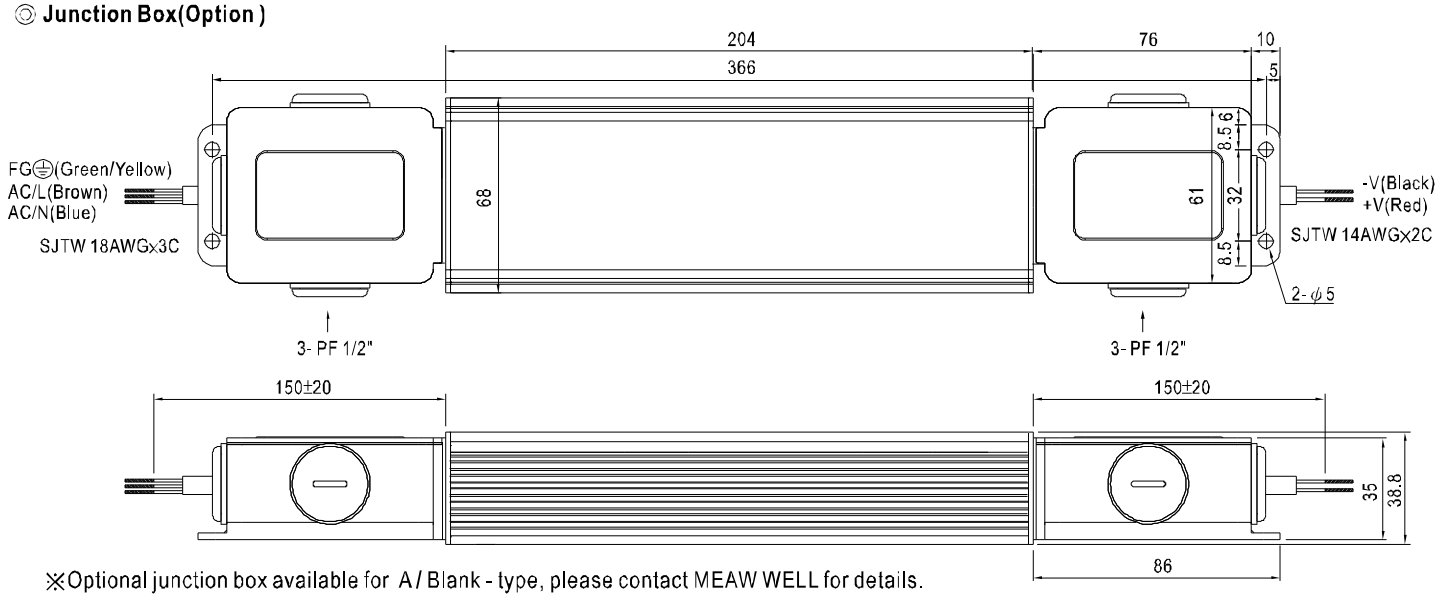
Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

◎ **Cable Joiner**



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.

◎ **Junction Box(Option)**



※Optional junction box available for A / Blank - type, please contact MEAW WELL for details.

NIETZ 185W Single Output Switching Power Supply HLG-185 series

Features :

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 94%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

HLG-185-12 A Blank : IP67 rated. Cable for I/O connection.
A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.
D (option) : IP67 rated. Timer dimming function, contact NIETZ for details.

SPECIFICATION

MODEL			HLG-185-12	HLG-185-15	HLG-185-20	HLG-185-24	HLG-185-30	HLG-185-36	HLG-185-42	HLG-185-48	HLG-185-54
OUTPUT	DC VOLTAGE		12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT		13A	11.5A	9.3A	7.8A	6.2A	5.2A	4.4A	3.9A	3.45A
	RATED POWER		156W	172W	186W	187.2W	186W	187.2W	184.8W	187.2W	186.3W
	RIPPLE & NOISE (max.) Note.2		150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5		10.8 ~ 13.5V	13.5 ~ 17V	17 ~ 22V	22 ~ 27V	27 ~ 33V	33 ~ 40V	38 ~ 46V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE		Can be adjusted by internal potentiometer or through output cable								
			6.5 ~ 13A	5.75 ~ 11.5A	4.65 ~ 9.3A	3.9 ~ 7.8A	3.1 ~ 6.2A	2.6 ~ 5.2A	2.2 ~ 4.4A	1.95 ~ 3.9A	1.72 ~ 3.45A
	VOLTAGE TOLERANCE Note.3		±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION		±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7		2500ms, 80ms at full load 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load 230VAC / 115VAC								
	HOLD UP TIME (Typ.)		16ms at full load 230VAC / 115VAC								
INPUT	VOLTAGE RANGE Note.4		90 ~ 264VAC 127 ~ 370VDC								
	FREQUENCY RANGE		47 ~ 63Hz								
	POWER FACTOR (Typ.)		PF>0.98/115VAC, PF>0.95/230VAC (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.)		92%	93%	93.5%	94%	94%	94%	94%	94%	94%
	AC CURRENT (Typ.)	12V	1.8A / 115VAC 0.8A / 230VAC								
		15V ~ 54V	2.1A / 115VAC 0.9A / 230VAC								
	INRUSH CURRENT (Typ.)		COLD START 75A/230VAC								
	LEAKAGE CURRENT		<0.75mA / 240VAC								
PROTECTION	OVER CURRENT		95 ~ 108%								
			Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT		Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE		14 ~ 17V	18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
			Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery								
	OVER TEMPERATURE		100℃ ±10℃ (RTH2)								
			Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.		-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY		20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY		-40 ~ +80℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 50℃)								
	VIBRATION		10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS Note.6		UL8750, EN61347-1, EN61347-2-13 independent, J61347-1, J61347-2-13, IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1								
	WITHSTAND VOLTAGE		I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE		I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION		Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥50% load) ; EN61000-3-3								
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, heavy industry level (surge 4KV), criteria A								
OTHERS	MTBF		192.2Khrs min. MIL-HDBK-217F (25℃)								
	DIMENSION		228*68*38.8mm (L*W*H)								
	PACKING		1.15Kg; 12pcs/14.8Kg/0.74CUFT								

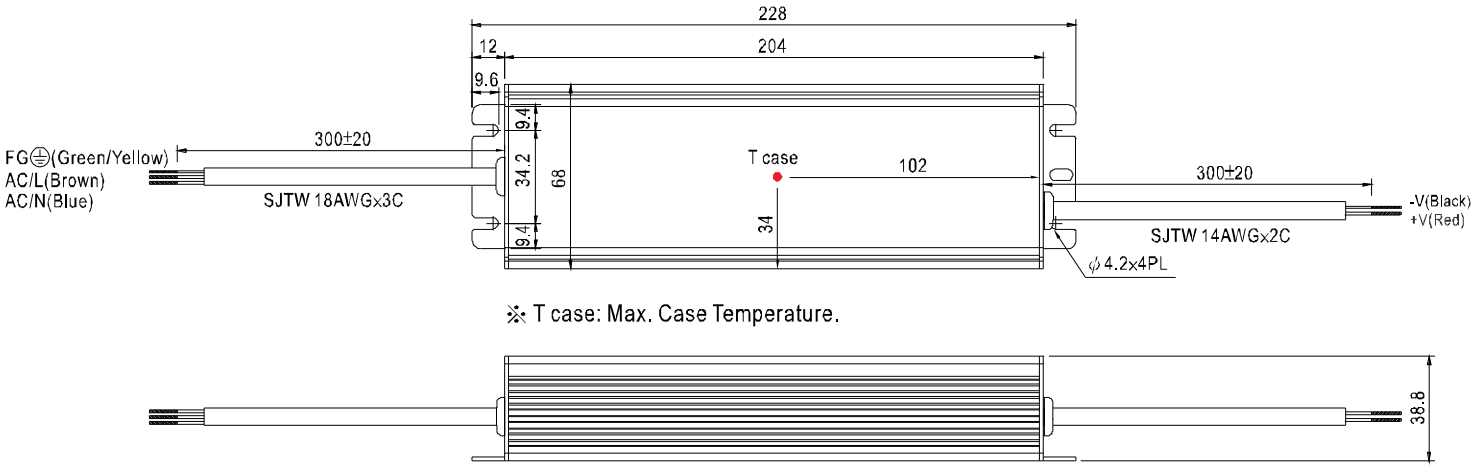
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Type A only.
6. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
9. Refer to warranty statement.

■ Mechanical Specification

Case No.994D Unit:mm

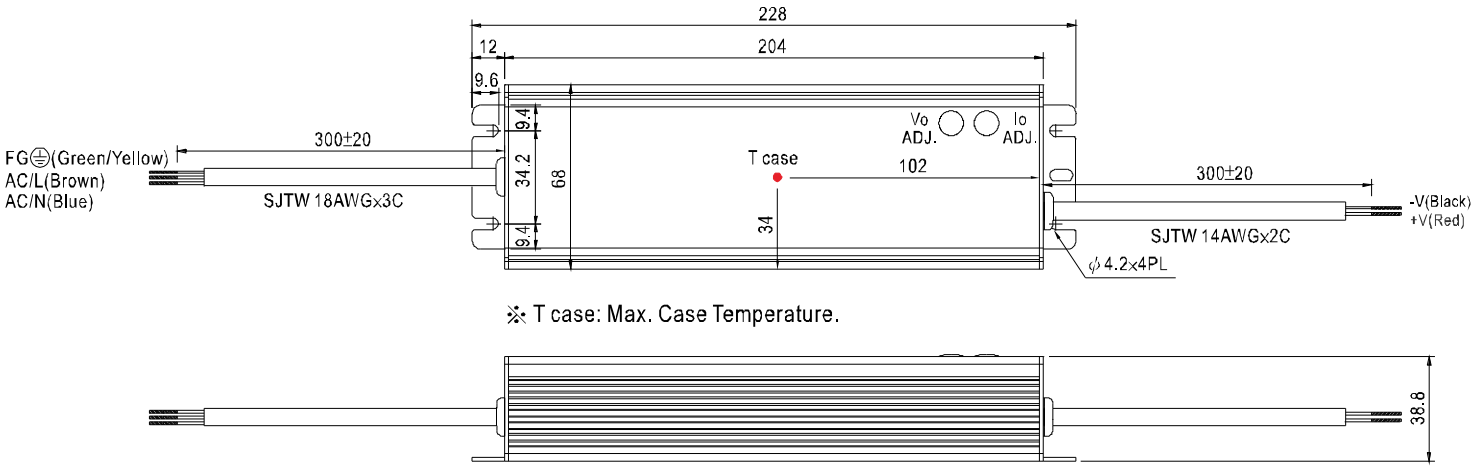
Blank:(HLG-185)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

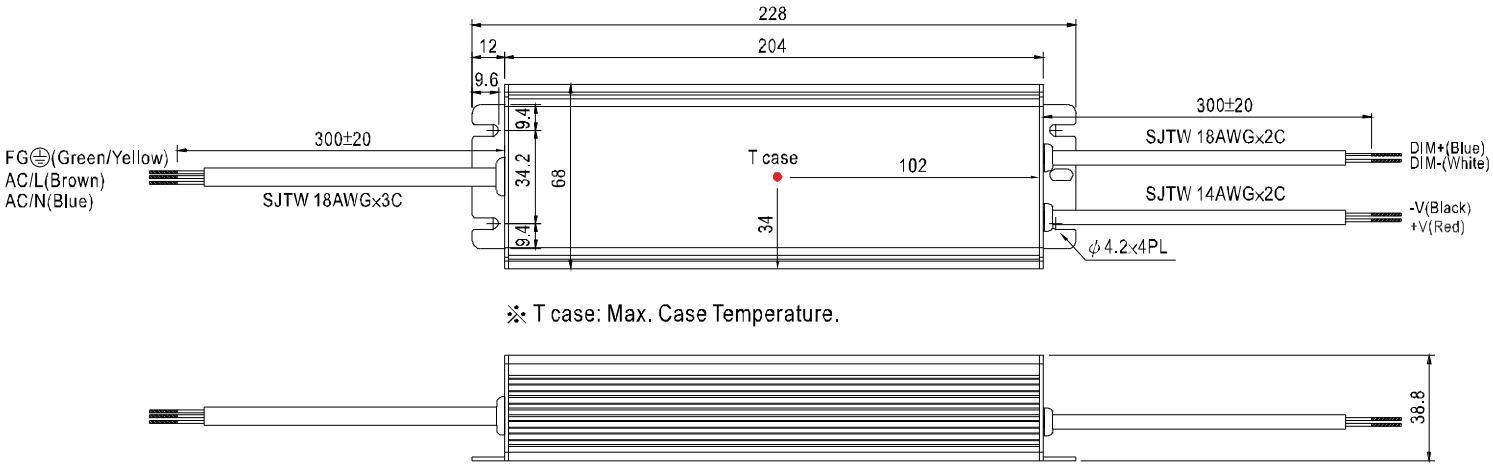
A Type:(HLG-185-_A)



※ T case: Max. Case Temperature.

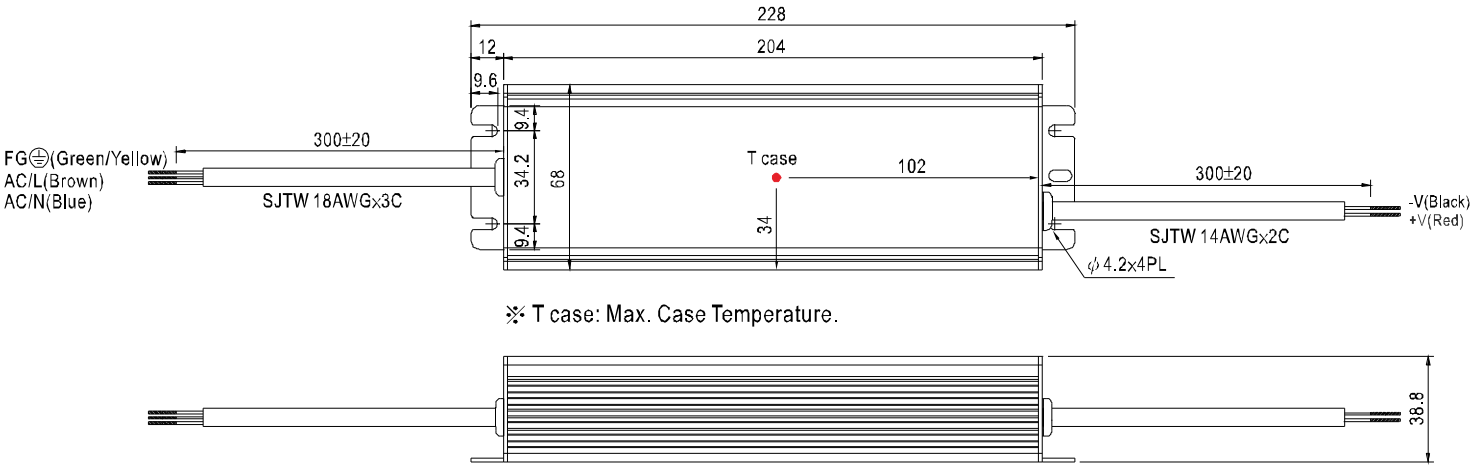
※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

B Type:(HLG-185-_B)



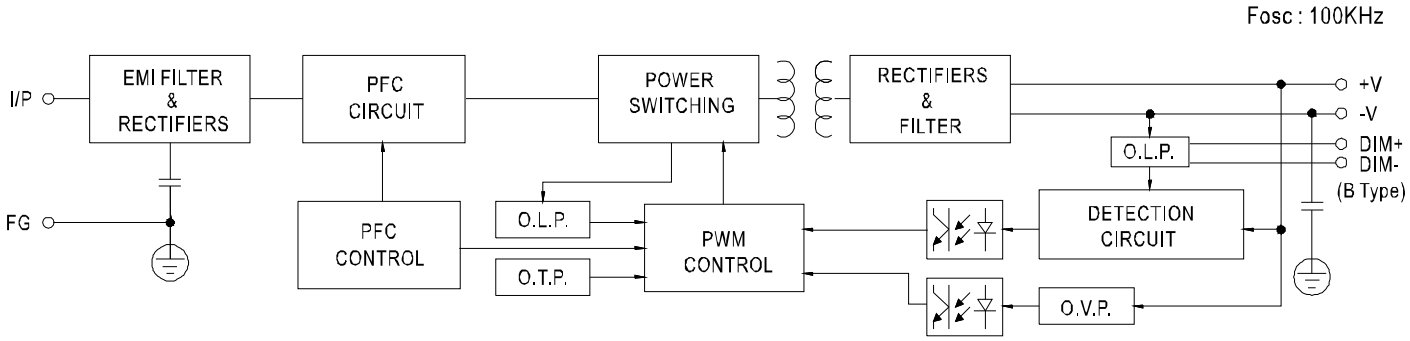
※ T case: Max. Case Temperature.

D Type(option):(HLG-185-_D)

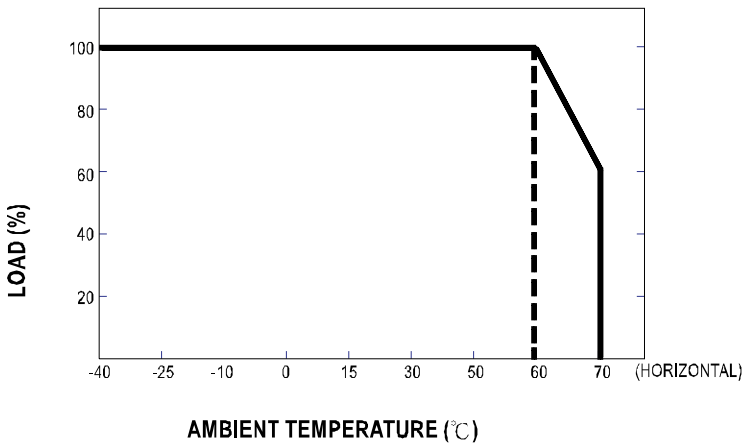


※ IP67 rated. Timer dimming function, contact MEAN WELL for details.

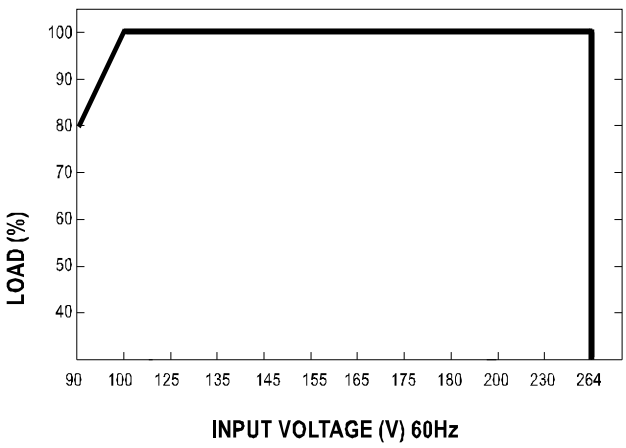
■ Block Diagram



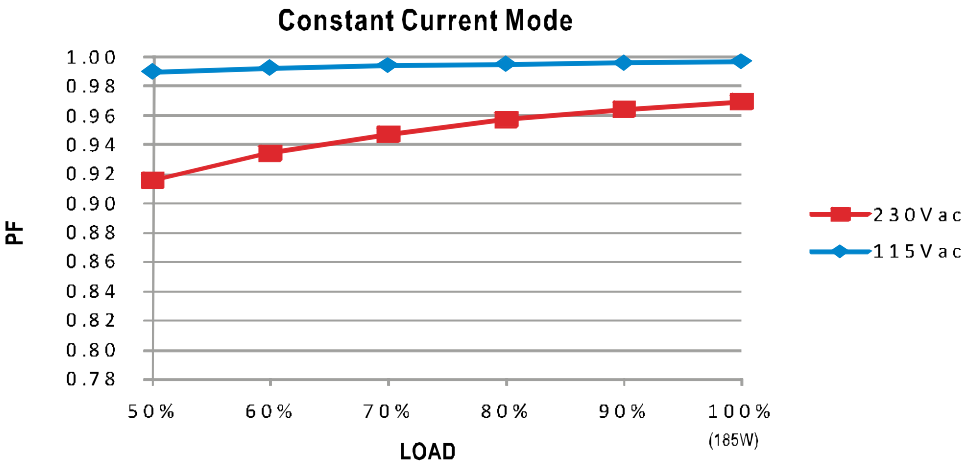
■ Derating Curve



■ Static Characteristics

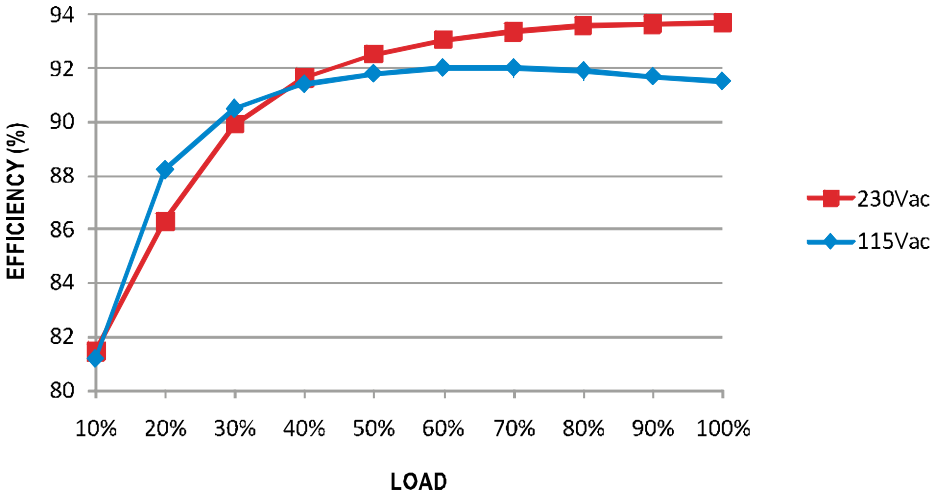


■ Power Factor Characteristic



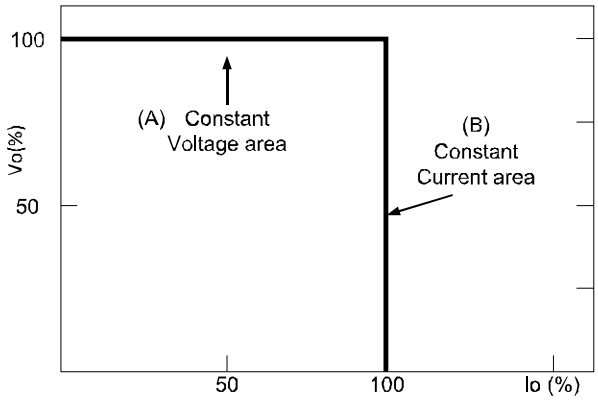
■ EFFICIENCY vs LOAD (48V Model)

HLG-185 series possess superior working efficiency that up to 94% can be reached in field applications.



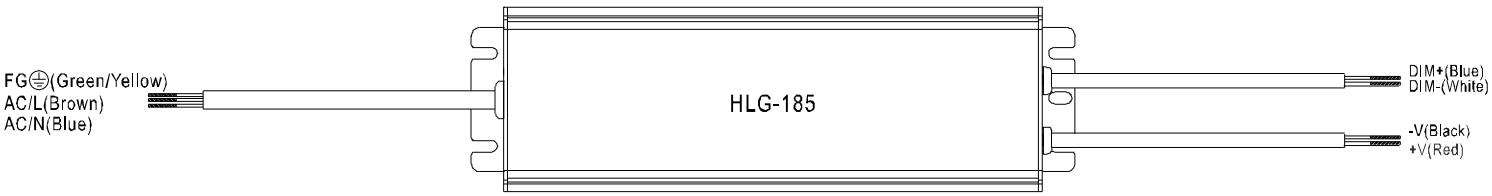
■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

■ DIMMING OPERATION



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

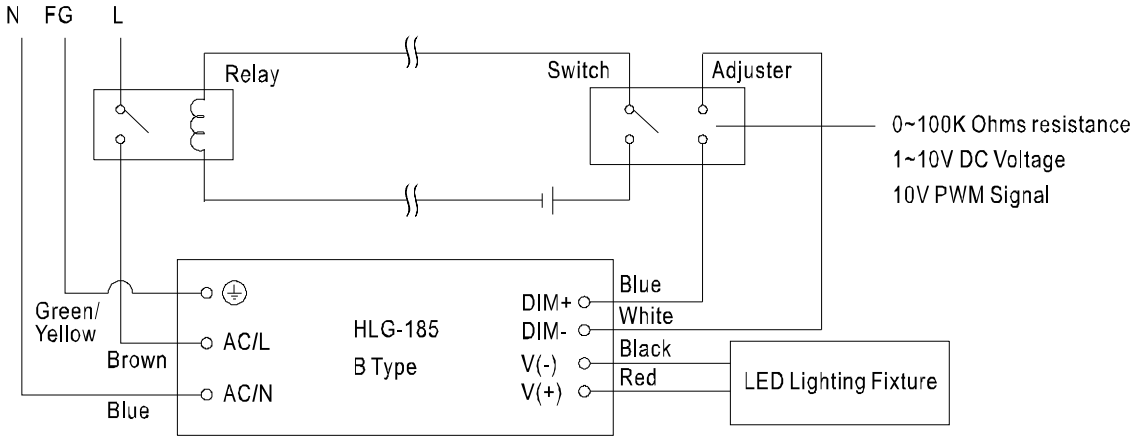
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100HZ ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :



Using a switch and relay can turn ON/OFF the lighting fixture.

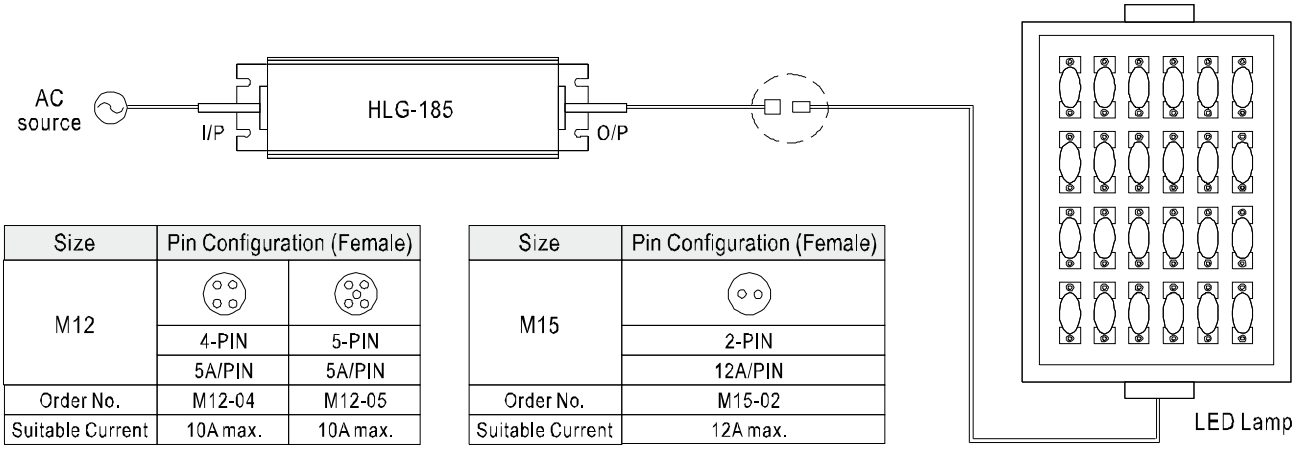
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

■ WATERPROOF CONNECTION

◎ Waterproof connector

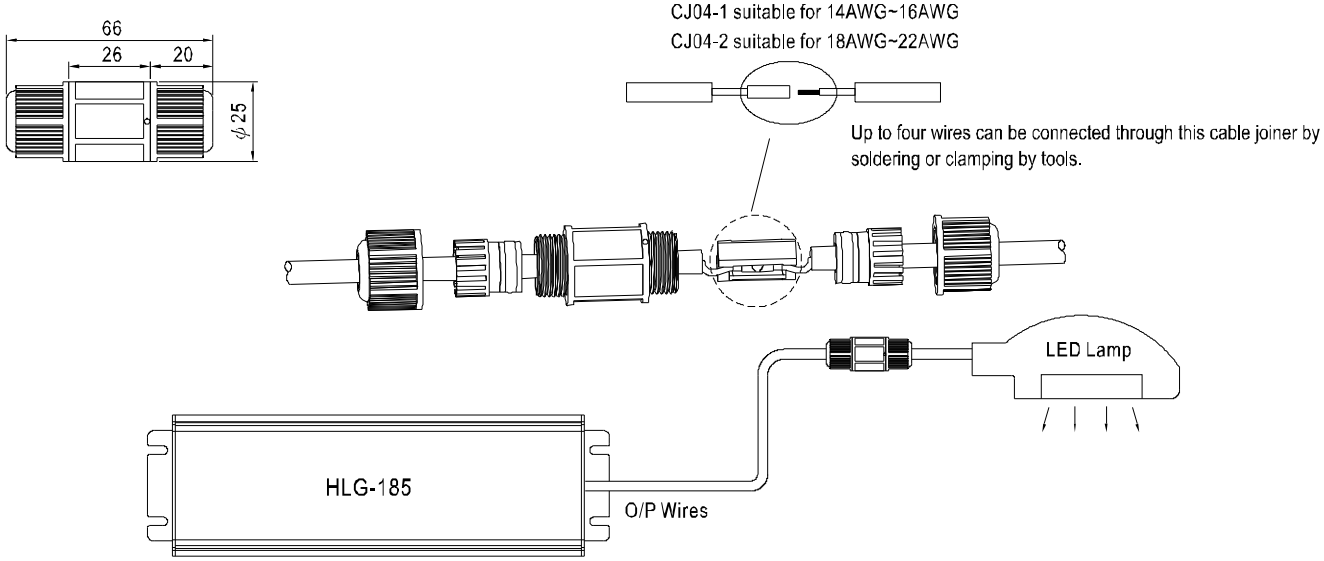
Waterproof connector can be assembled on the output cable of HLG-185 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

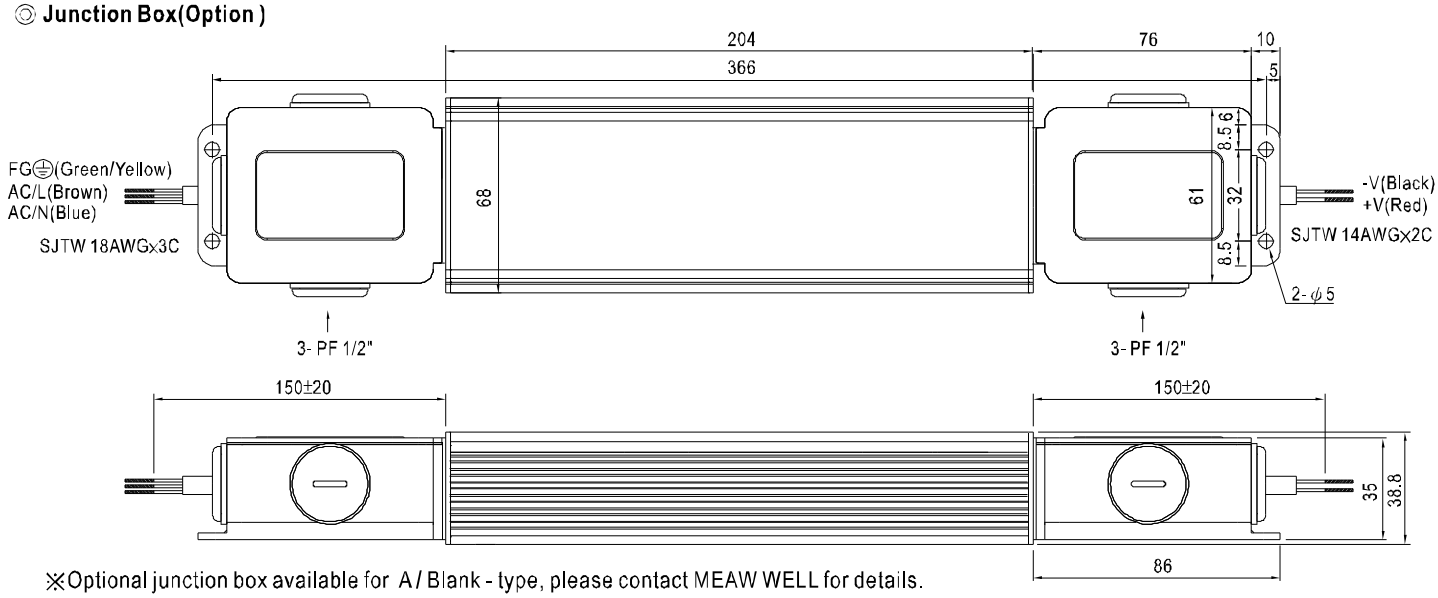
Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

◎ **Cable Joiner**



※CJ04 cable joiner can be purchased independently for user's own assembly.
MEAN WELL order No. : CJ04-1, CJ04-2.

◎ **Junction Box(Option)**



※Optional junction box available for A / Blank - type, please contact MEAW WELL for details.

NIETZ 20W Single Output Switching Power Supply **LPV-20 series**

■ Features :

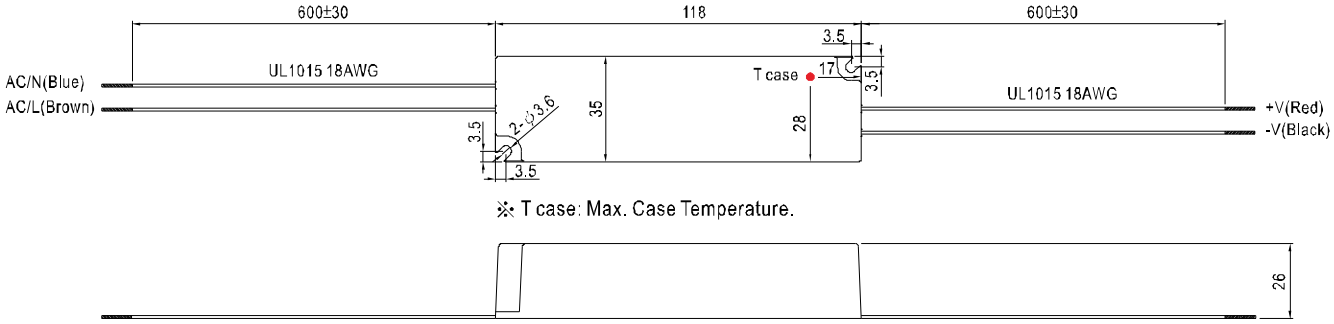
- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Small and compact size
- Fully encapsulated with IP67 level (Note.7)
- Fully isolated plastic case
- Class Ⅱ power unit, no FG
- Pass LPS
- Suitable for LED lighting and moving sign applications
- 100% full load burn-in test
- Low cost, high reliability

SPECIFICATION

MODEL		LPV-20-5	LPV-20-12	LPV-20-15	LPV-20-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	3A	1.67A	1.33A	0.84A
	CURRENT RANGE	0 ~ 3A	0 ~ 1.67A	0 ~ 1.33A	0 ~ 0.84A
	RATED POWER	15W	20W	20W	20.2W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±5.0%			
	LINE REGULATION	±1.0%			
	LOAD REGULATION	±2.0%			
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC 500ms, 20ms / 115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 16ms/115VAC at full load			
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	77%	81%	83%	83%
	AC CURRENT (Typ.)	0.55A/115VAC 0.35A/230VAC			
	INRUSH CURRENT(max.)	COLD START 35A/115VAC 70A/230VAC			
	LEAKAGE CURRENT	0.25mA / 240VAC			
PROTECTION	OVERLOAD	110 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16V	17.5 ~ 21V	28 ~ 32V
		Protection type : Shut off o/p voltage, clamping by zener diode			
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	UL879, UL1310 Class 2, CAN/CSA C22.2 No. 223-M91, IP67 approved ; design refer to TUV EN60950-1, EN61347-2-13			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC			
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A			
OTHERS	MTBF	786.5Khrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	118*35*26mm (L*W*H)			
	PACKING	0.22Kg; 60pcs/14.2Kg/0.62CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. 6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 7. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute.				

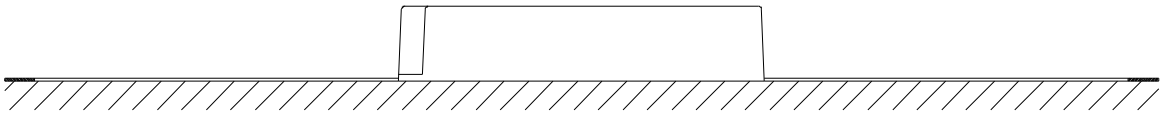
■ Mechanical Specification

Case No. 972A Unit:mm



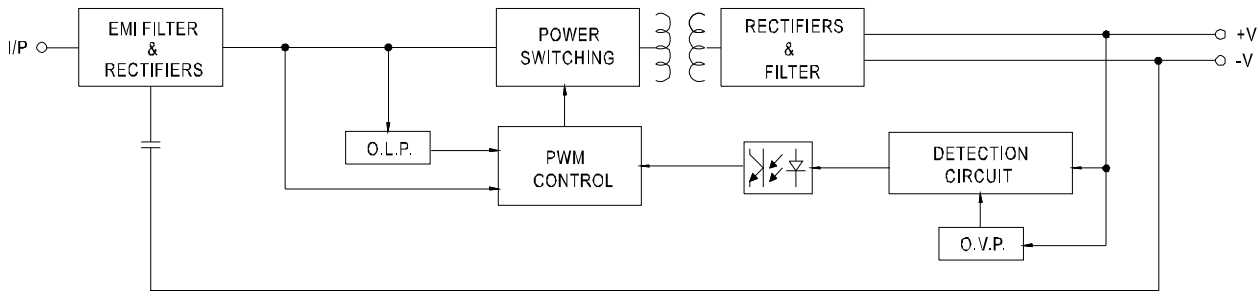
※ T case: Max. Case Temperature.

■ Recommend Mounting Direction

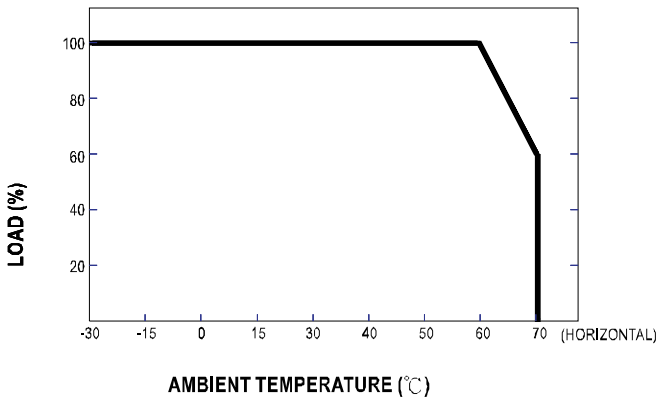


■ Block Diagram

fosc : 65KHz

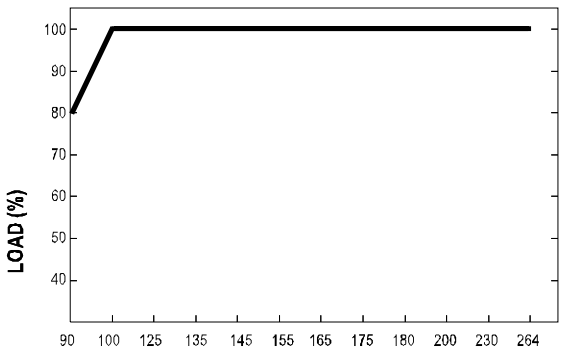


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

NIETZ 35W Single Output Switching Power Supply LPV-35 series

Features :

- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Fully encapsulated with IP67 level (Note.9)
- Fully isolated plastic case
- Class Ⅱ power unit, no FG
- Pass LPS
- Suitable for LED lighting and moving sign applications (Note.8)
- 100% full load burn-in test
- Low cost, high reliability

SPECIFICATION

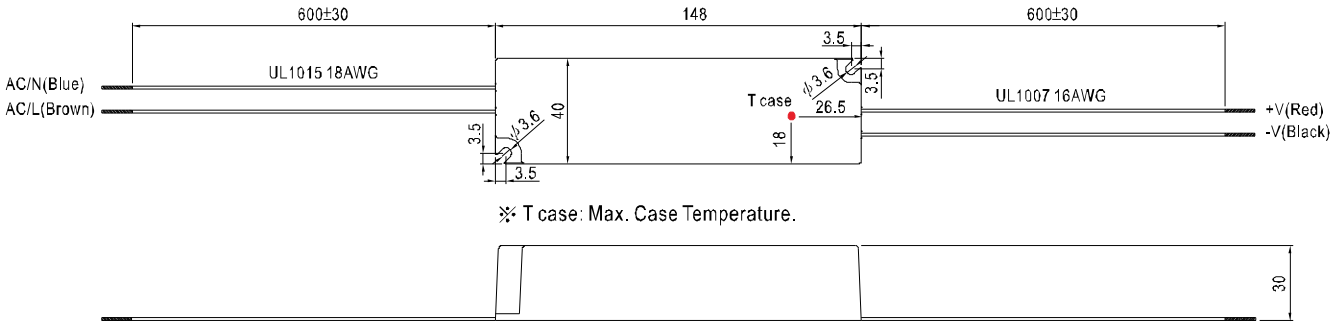
MODEL		LPV-35-5	LPV-35-12	LPV-35-15	LPV-35-24	LPV-35-36
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V
	RATED CURRENT	5A	3A	2.4A	1.5A	1A
	CURRENT RANGE	0 ~ 6A (Note.7)	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A	0 ~ 1A
	RATED POWER	30W	36W	36W	36W	36W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±6.0%	±5.0%			
	LINE REGULATION	±1.0%				
	LOAD REGULATION	±4.0%	±2.0%			
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC 500ms, 20ms / 115VAC at full load				
	HOLD UP TIME (Typ.)	50ms/230VAC 16ms/115VAC at full load				
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	77%	84%	84%	85%	85%
	AC CURRENT (Typ.)	1.1A/115VAC 0.7A/230VAC				
	INRUSH CURRENT(max.)	COLD START 30A/115VAC 60A/230VAC				
	LEAKAGE CURRENT	0.25mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power				
		Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-30 ~ +75℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL1310 Class 2, CAN/CSA C22.2 No. 223-M91, IP67 approved ; design refer to TUV EN60950-1, EN61347-2-13				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC				
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A				
OTHERS	MTBF	743.5Khrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	148*40*30mm (L*W*H)				
	PACKING	0.34Kg; 40pcs/14.6Kg/0.63CUFT				

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. LPV-35-5 can provide 6A of output current continuously. Based on the requirement of UL1310 class 2, the output current is only certified up to 5A for the test report of LPV-35-5.
8. In the European market this power supply can be used for LED lighting applications with input power up to 25W.
9. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute.

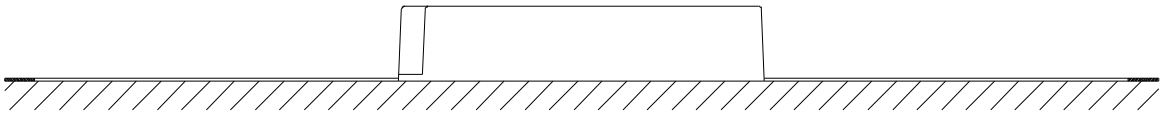
■ Mechanical Specification

Case No.975A Unit:mm



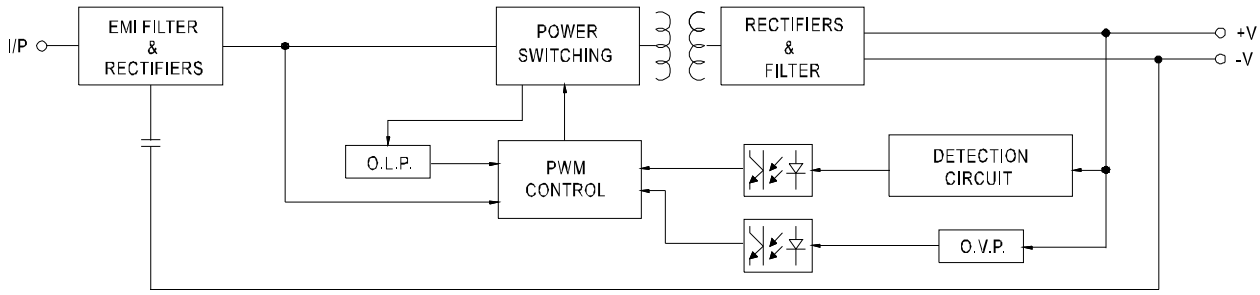
※ T case: Max. Case Temperature.

■ Recommend Mounting Direction

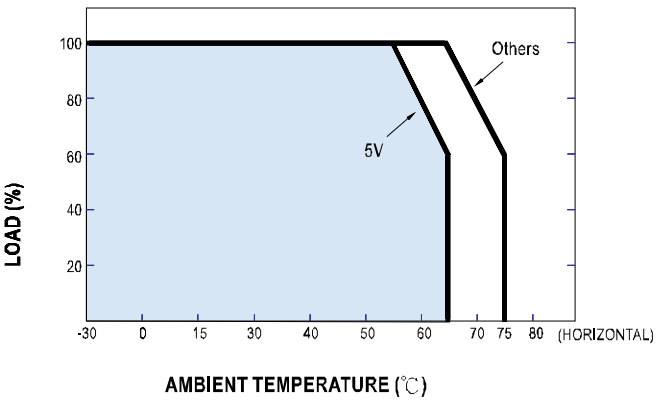


■ Block Diagram

fosc : 65KHz

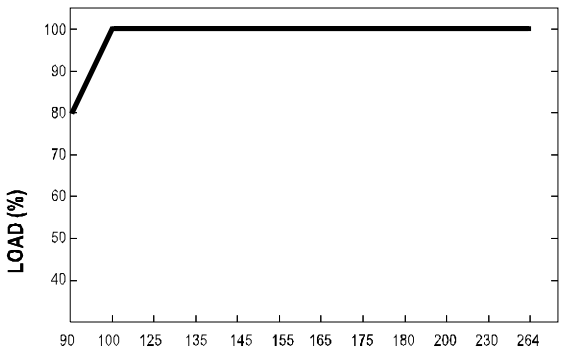


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

NIETZ 60W Single Output Switching Power Supply LPV-60 series

Features :

- Constant voltage design
- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Fully encapsulated with IP67 level (Note.8)
- Fully isolated plastic case
- Class II power unit, no FG
- Pass LPS
- Suitable for LED lighting and moving sign applications (Note.7)
- 100% full load burn-in test
- Low cost, high reliability

SPECIFICATION

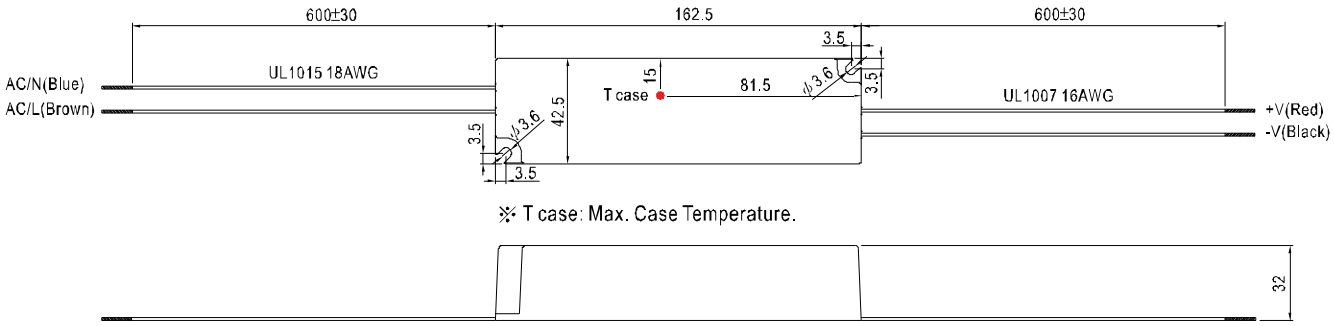
MODEL		LPV-60-5	LPV-60-12	LPV-60-15	LPV-60-24	LPV-60-36	LPV-60-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	8A	5A	4A	2.5A	1.67A	1.25A
	CURRENT RANGE	0 ~ 8A	0 ~ 5A	0 ~ 4A	0 ~ 2.5A	0 ~ 1.67A	0 ~ 1.25A
	RATED POWER	40W	60W	60W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±8.0%	±5.0%				
	LINE REGULATION	±1.0%					
	LOAD REGULATION	±6.0%	±2.0%				
	SETUP, RISE TIME Note.6	500ms, 20ms / 230VAC 500ms, 20ms / 115VAC at full load(for 5~36V) ; 500ms, 30ms / 230VAC 500ms, 30ms / 115VAC at full load(for 48V)					
	HOLD UP TIME (Typ.)	50ms/230VAC 16ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	76%	83%	83%	86%	86%	86%
	AC CURRENT (Typ.)	1.2A/115VAC 1A/230VAC					
	INRUSH CURRENT(max.)	COLD START 30A/115VAC 60A/230VAC					
	LEAKAGE CURRENT	0.25mA / 240VAC					
PROTECTION	OVERLOAD	110 ~ 150% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UL879, UL1310 Class 2(except for LPV-60-5), CAN/CSA C22.2 No. 223-M91(except for LPV-60-5,LPV-60-48), IP67 approved ; design refer to TUV EN60950-1, EN61347-2-13					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A					
OTHERS	MTBF	732Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	162.5*42.5*32mm (L*W*H)					
	PACKING	0.4Kg; 32pcs/13.8Kg/0.56CUFT					

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. In the European market this product is only suitable for LED lighting applications that don't have to comply with the harmonic current requirements of EN61000-3-2 Class C.
8. Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minute.

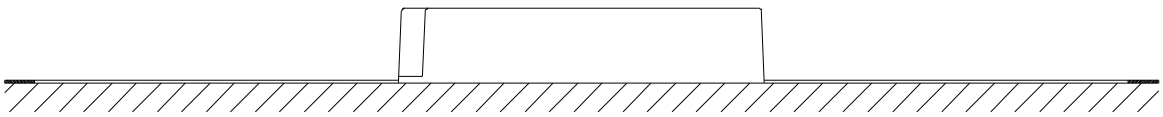
■ Mechanical Specification

Case No. 976A Unit:mm



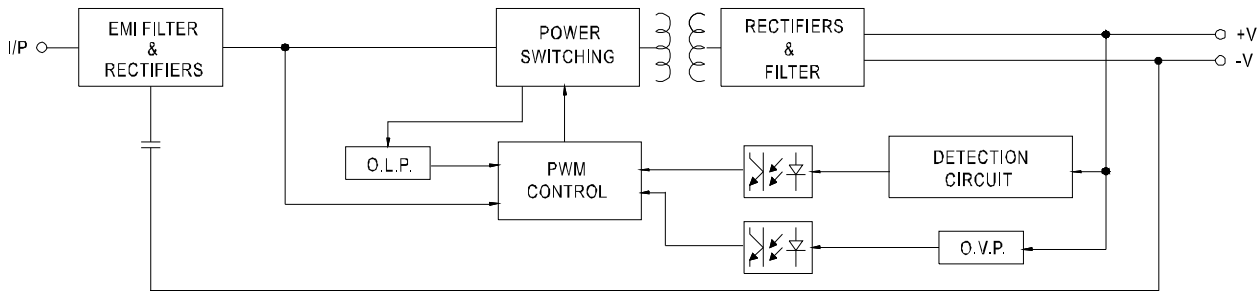
※ T case: Max. Case Temperature.

■ Recommend Mounting Direction

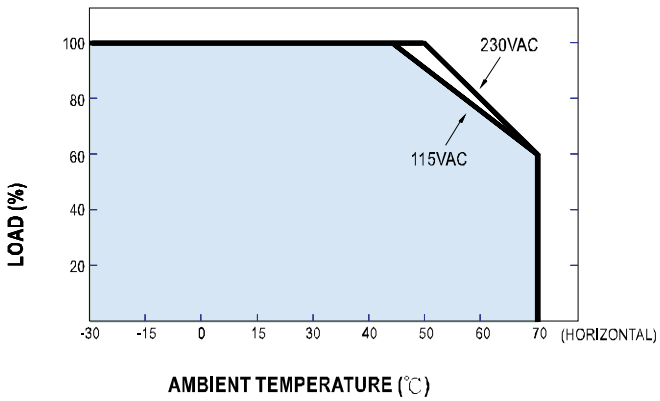


■ Block Diagram

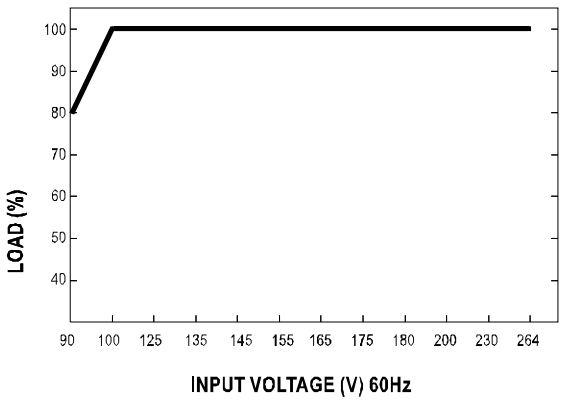
fosc : 65KHz



■ Derating Curve



■ Static Characteristics



NIETZ 100W Single Output Switching Power Supply LPV-100 series

■ Features :

- Constant voltage design
- Universal AC input / Full range
- Fully encapsulated with IP67 level (Note.8)
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Over current / Over voltage
- Fully isolated plastic case
- Cooling by free air convection
- 100% full load burn-in test
- Low cost, high reliability
- Suitable for LED lighting and moving sign applications(Note 7.)

SPECIFICATION

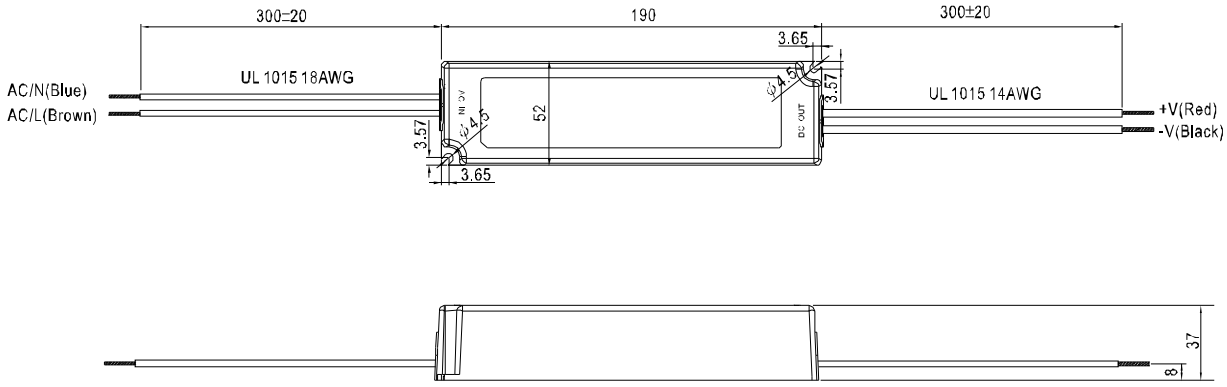
MODEL		LPV-100-5	LPV-100-12	LPV-100-15	LPV-100-24	LPV-100-36	LPV-100-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	36V	48V
	RATED CURRENT	12A	8.5A	6.7A	4.2A	2.8A	2.1A
	CURRENT RANGE	0 ~ 12A	0 ~ 8.5A	0 ~ 6.7A	0 ~ 4.2A	0 ~ 2.8A	0 ~ 2.1A
	RATED POWER	60W	102W	100.5W	100.8W	100.8W	100.8W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±8.0%	±5.0%				
	LINE REGULATION	±1.0%					
	LOAD REGULATION	±6.0%	±2.0%				
	SETUP, RISE TIME Note.6	2000ms, 25ms / 230VAC 2000ms, 25ms / 115VAC					
	HOLD UP TIME (Typ.)	50ms/230VAC 14ms/115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	80%	85%	87%	88%	88%	89%
	AC CURRENT	2.2A/115VAC 1.2A/230VAC					
	INRUSH CURRENT(max.)	COLD START 30A/115VAC 75A/230VAC					
	LEAKAGE CURRENT	0.25mA / 240VAC					
PROTECTION	OVER CURRENT	110 ~ 150% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	41.4 ~ 48.6V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-25 ~ +70°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	IP67 approved; Design refer to TUV EN60950-1, EN61347-2-13					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2 Class A(≒80% load), EN61000-3-3					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN55024, light industry level, criteria A					
OTHERS	MTBF	703Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	190*52*37mm (L*W*H)					
	PACKING	0.63Kg;20pcs/13.6Kg/0.51CUFT					

NOTE

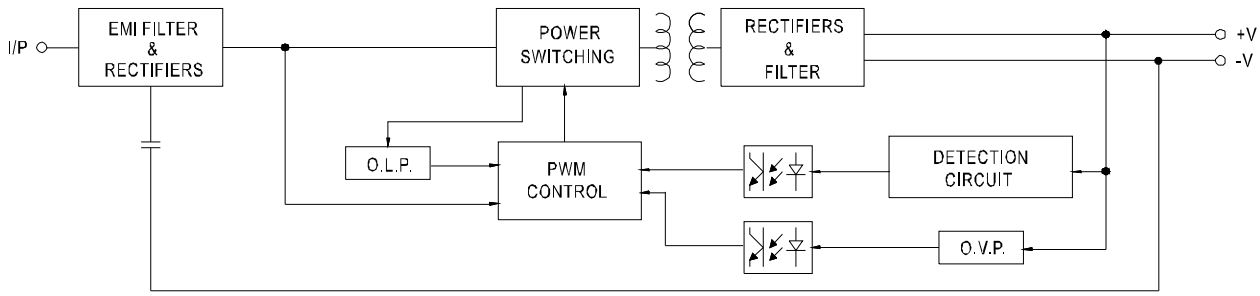
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. In the European market this product is only suitable for LED lighting applications that don't have to comply with the harmonic current requirements of EN61000-3-2 Class C.
8. Suitable for indoor use or outdoor use without direct sunlight exposure.

■ Mechanical Specification

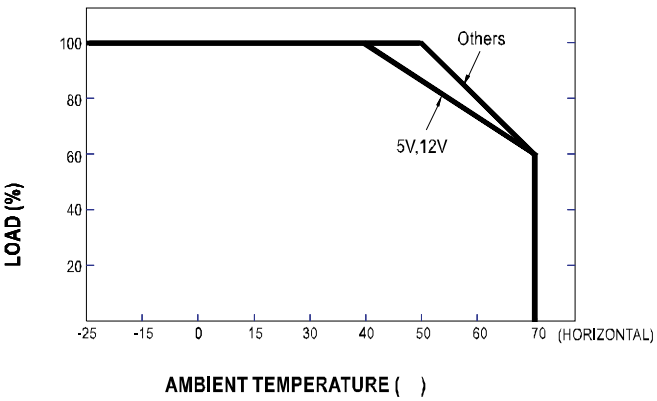
Case No. 999A Unit:mm



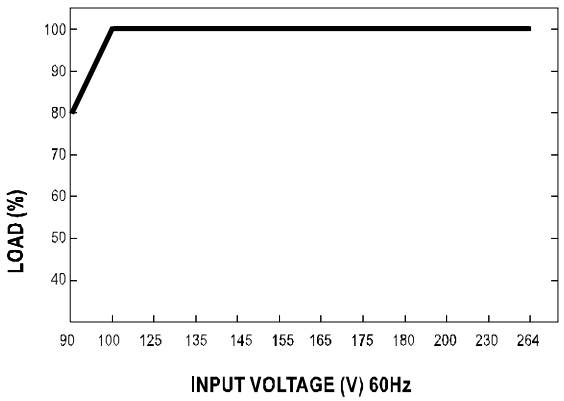
■ Block Diagram



■ Derating Curve



■ Static Characteristics



NIETZ 10W Single Output Industrial DIN Rail Power Supply MDR-10 series

■ Features :

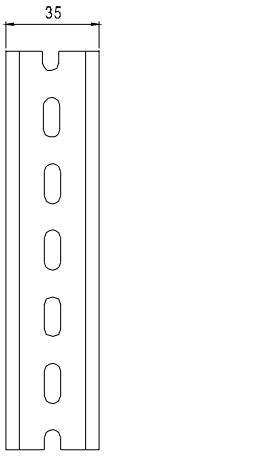
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test

SPECIFICATION

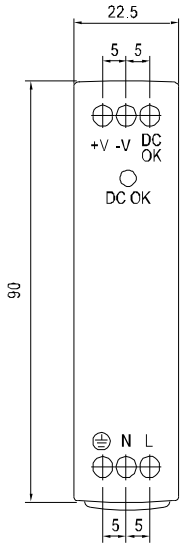
MODEL		MDR-10-5	MDR-10-12	MDR-10-15	MDR-10-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	2A	0.84A	0.67A	0.42A
	CURRENT RANGE	0 ~ 2A	0 ~ 0.84A	0 ~ 0.67A	0 ~ 0.42A
	RATED POWER	10W	10W	10W	10W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±5.0%	±3.0%	±3.0%	±2.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±5.0%	±3.0%	±3.0%	±2.0%
	SETUP, RISE TIME Note.5	500ms, 30ms/230VAC 1000ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	120ms/230VAC 25ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	77%	81%	81%	84%
	AC CURRENT (Typ.)	0.33A/115VAC 0.21A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 35A/115VAC 70A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	Above 105% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
FUNCTION	DC OK ACTIVE SIGNAL (max.)	3.75 ~ 6V / 50mA	9 ~ 13.5V / 40mA	11.5 ~ 16.5V / 40mA	18 ~ 27V / 20mA
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved, NEC class 2 / LPS compliant			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A			
OTHERS	MTBF	584K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	22.5*90*100mm (W*H*D)			
	PACKING	0.17Kg; 72pcs/13.2Kg/0.91CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.				

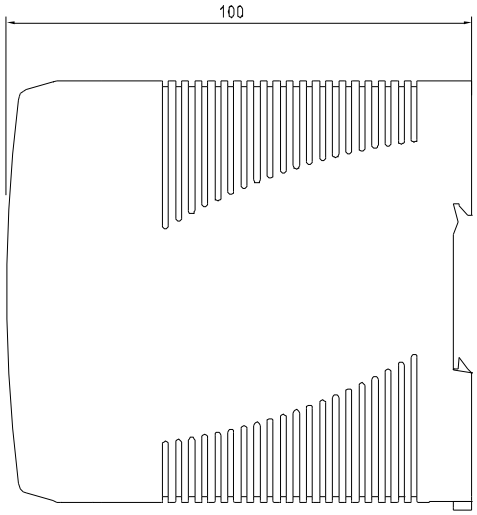
■ Mechanical Specification

Case No. 956 Unit:mm



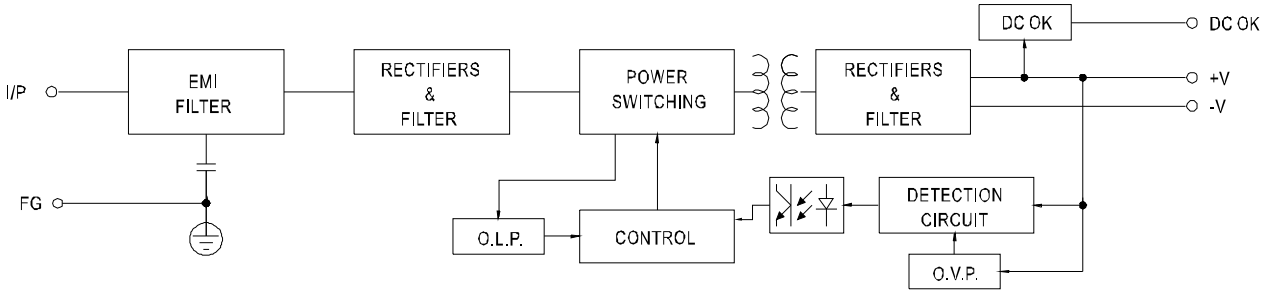
Install DIN rail TS35/7.5 or TS35/15





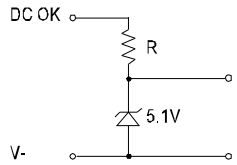
■ Block Diagram

fosc : 60KHz



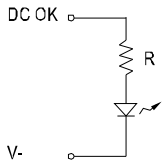
■ Application of DC OK Active Signal

(a) 5V signal



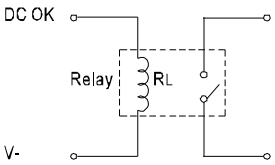
Model	R
5V	≥200Ω
12V	≧1.5KΩ
15V	≥2KΩ
24V	≧3.9KΩ

(b) LED



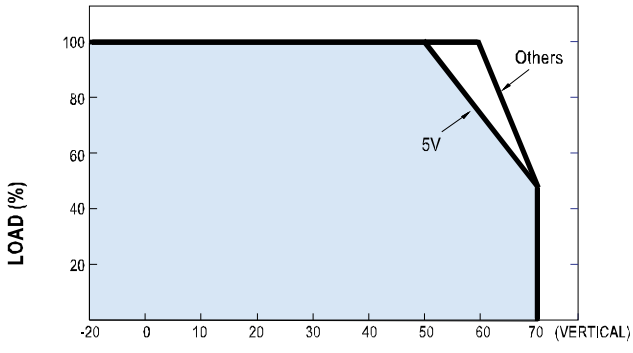
Model	R
5V	≥1KΩ
12V	≧2.4KΩ
15V	≥3KΩ
24V	≧4.7KΩ

(c) Relay



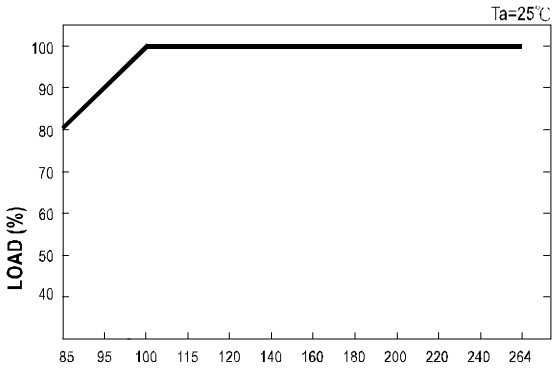
Model	RL
5V	≥120Ω
12V	≧700Ω
15V	≥700Ω
24V	≧1.2KΩ

■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 20W Single Output Industrial DIN Rail Power Supply MDR-20 series

■ Features :

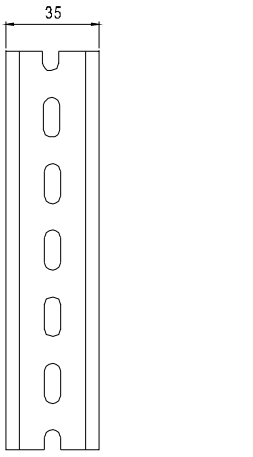
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test

SPECIFICATION

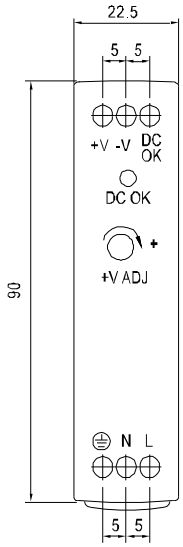
MODEL		MDR-20-5	MDR-20-12	MDR-20-15	MDR-20-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	3A	1.67A	1.34A	1A
	CURRENT RANGE	0 ~ 3A	0 ~ 1.67A	0 ~ 1.34A	0 ~ 1A
	RATED POWER	15W	20W	20W	24W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME Note.5	500ms, 30ms/230VAC 1000ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 20ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	76%	80%	81%	84%
	AC CURRENT (Typ.)	0.55A/115VAC 0.35A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 160% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
FUNCTION	DC OK ACTIVE SIGNAL (max.)	3.75 ~ 6V / 50mA	9 ~ 13.5V / 40mA	11.5 ~ 16.5V / 40mA	18 ~ 27V / 20mA
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved, NEC class 2 / LPS compliant			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A			
OTHERS	MTBF	236.9K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	22.5*90*100mm (W*H*D)			
	PACKING	0.19Kg; 72pcs/14.7Kg/0.91CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.				

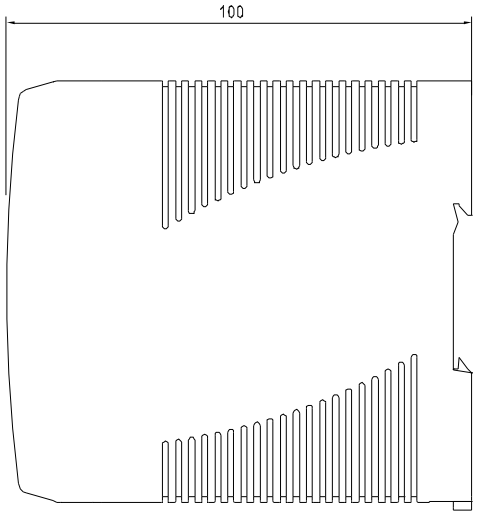
■ Mechanical Specification

Case No. 956 Unit:mm



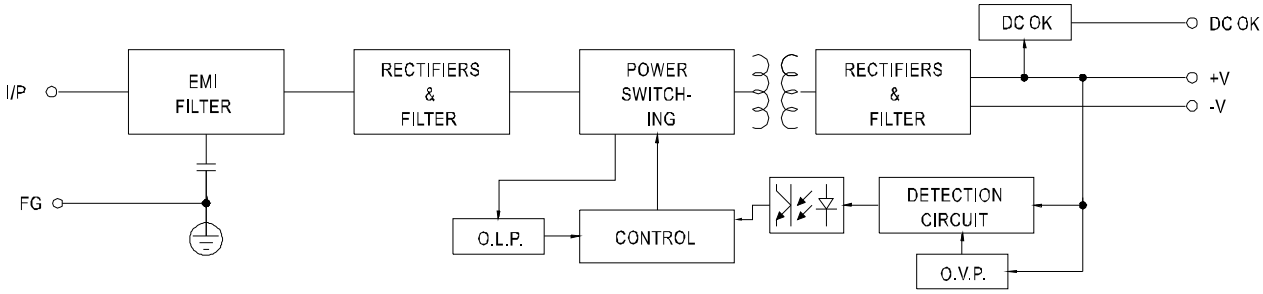
Install DIN rail TS35/7.5 or TS35/15





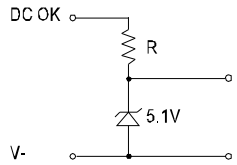
■ Block Diagram

fosc : 60KHz



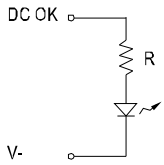
■ Application of DC OK Active Signal

(a) 5V signal



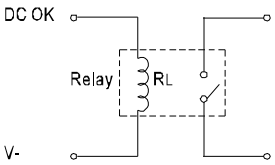
Model	R
5V	≥200Ω
12V	≧1.5KΩ
15V	≥2KΩ
24V	≧3.9KΩ

(b) LED



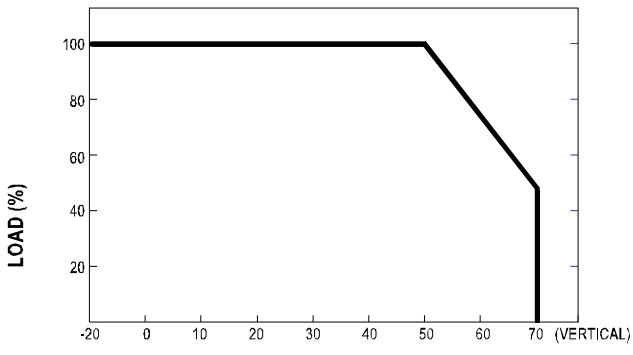
Model	R
5V	≥1KΩ
12V	≧2.4KΩ
15V	≥3KΩ
24V	≧4.7KΩ

(c) Relay

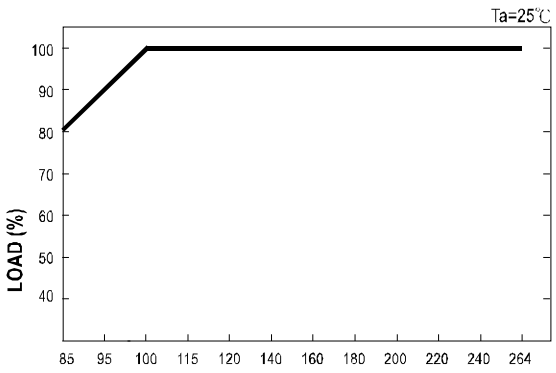


Model	RL
5V	≥120Ω
12V	≧700Ω
15V	≥700Ω
24V	≧1.2KΩ

■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 40W Single Output Industrial DIN Rail Power Supply MDR-40 series

■ Features :

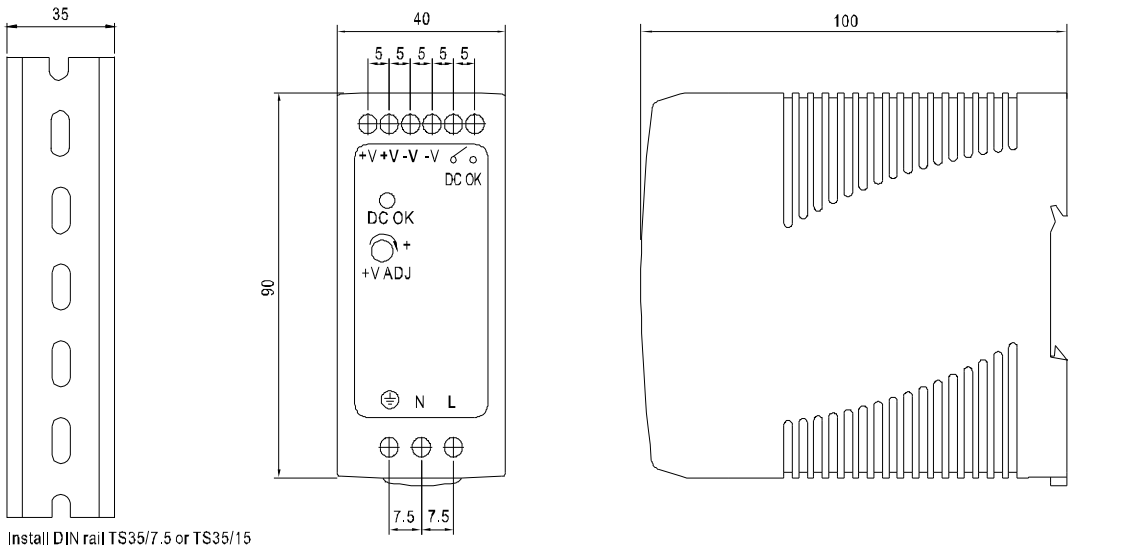
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant (12V,24V,48V only)
- LED indicator for power on
- DC OK relay contact
- No load power consumption<0.75W
- 100% full load burn-in test

SPECIFICATION

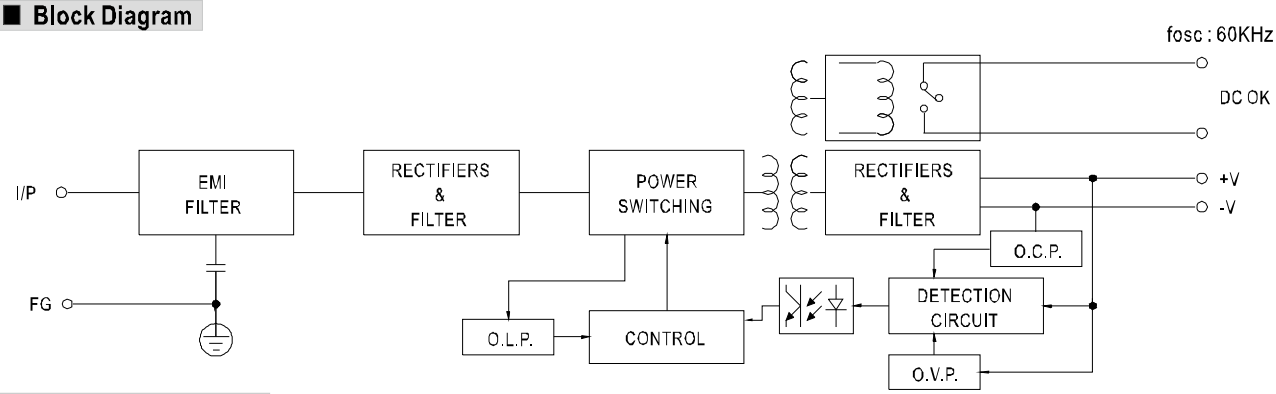
MODEL		MDR-40-5	MDR-40-12	MDR-40-24	MDR-40-48
OUTPUT	DC VOLTAGE	5V	12V	24V	48V
	RATED CURRENT	6A	3.33A	1.7A	0.83A
	CURRENT RANGE	0 ~ 6A	0 ~ 3.33A	0 ~ 1.7A	0 ~ 0.83A
	RATED POWER	30W	40W	40.8W	39.8W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	5 ~ 6V	12 ~ 15V	24 ~ 30V	48 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME Note.5	500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 20ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	78%	86%	88%	88%
	AC CURRENT (Typ.)	1.1A/115VAC 0.7A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 60A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	6.25 ~ 7.25V	15.6 ~ 18V	31.2 ~ 36V	57.6 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover			
FUNCTION	DC OK SIGNAL	Relay contact rating(max.): 30V/1A resistive			
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	Component : 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ; Mounting : Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved, NEC class 2 / LPS compliant (12V,24V,48V only)			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A			
OTHERS	MTBF	301.7K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	40*90*100mm (W*H*D)			
	PACKING	0.3Kg; 42pcs/13.6Kg/0.82CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.				

■ Mechanical Specification

Case No.962A Unit:mm



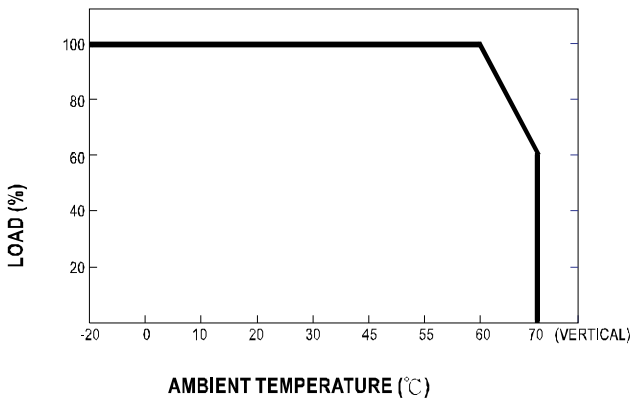
■ Block Diagram



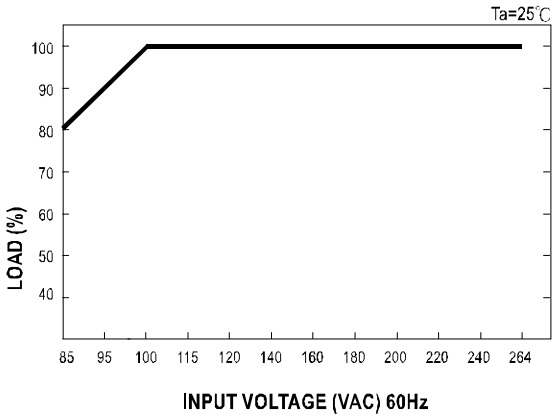
■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 60W Single Output Industrial DIN Rail Power Supply MDR-60 series

■ Features :

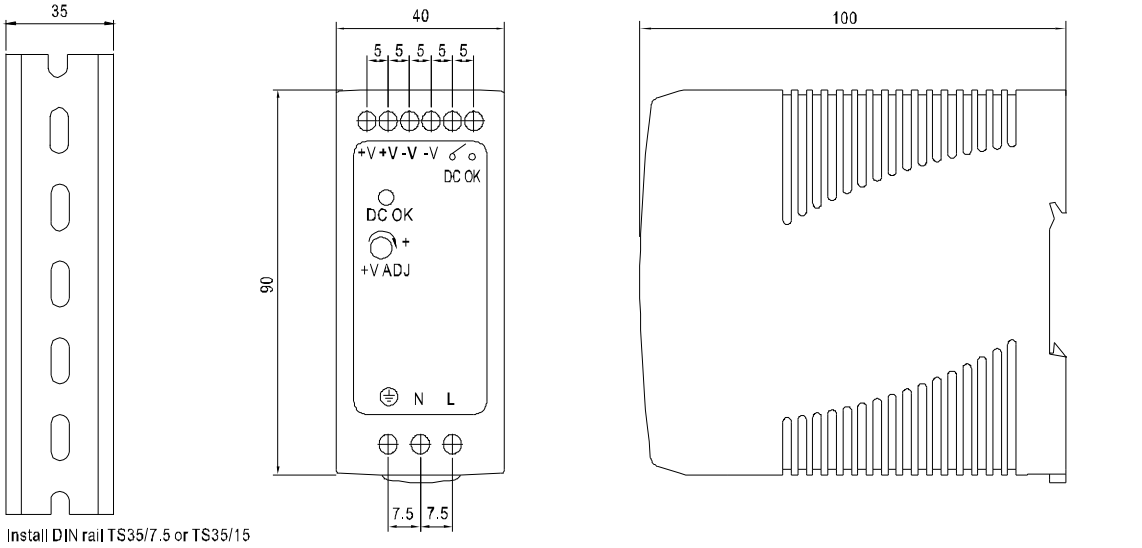
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant (24V,48V only)
- LED indicator for power on
- DC OK relay contact
- No load power consumption<0.75W
- 100% full load burn-in test

SPECIFICATION

MODEL		MDR-60-5	MDR-60-12	MDR-60-24	MDR-60-48
OUTPUT	DC VOLTAGE	5V	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A	1.25A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A	0 ~ 1.25A
	RATED POWER	50W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	5 ~ 6V	12 ~ 15V	24 ~ 30V	48 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.5%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME Note.5	500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 20ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	78%	86%	88%	87%
	AC CURRENT (Typ.)	1.8A/115VAC 1A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 60A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	6.25 ~ 7.25V	15.6 ~ 18V	31.2 ~ 36V	57.6 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover			
FUNCTION	DC OK SIGNAL	Relay contact rating(max.): 30V/1A resistive			
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	Component : 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ; Mounting : Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, UL60950-1, TUV EN60950-1 approved, NEC class 2 / LPS compliant (24V,48V only)			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A			
OTHERS	MTBF	299.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	40*90*100mm (W*H*D)			
	PACKING	0.33Kg; 42pcs/14.8Kg/0.82CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.				

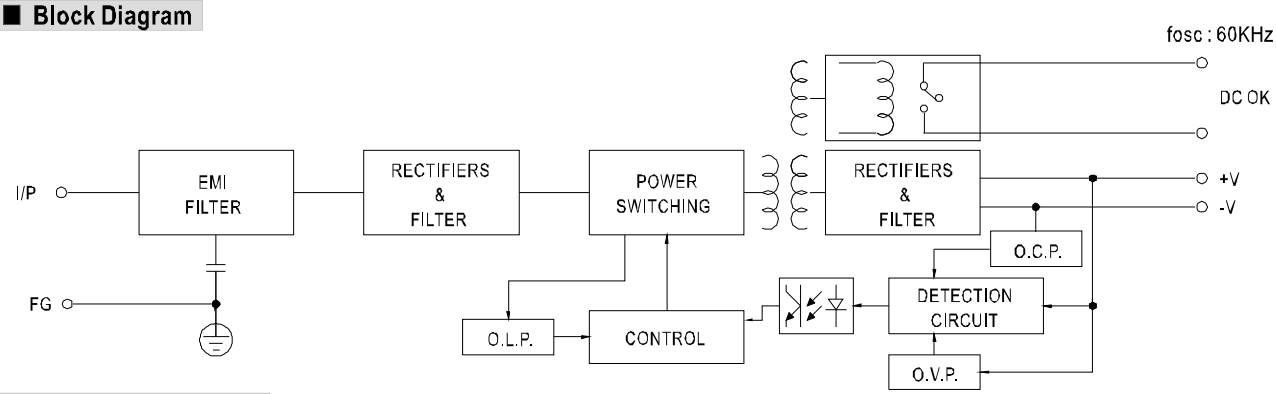
■ Mechanical Specification

Case No.962A Unit:mm



Install DIN rail TS35/7.5 or TS35/15

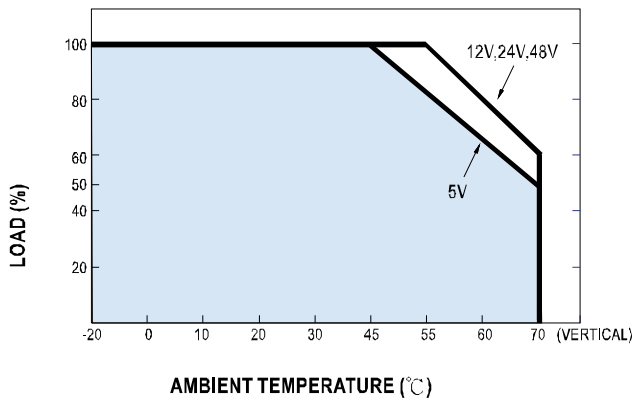
■ Block Diagram



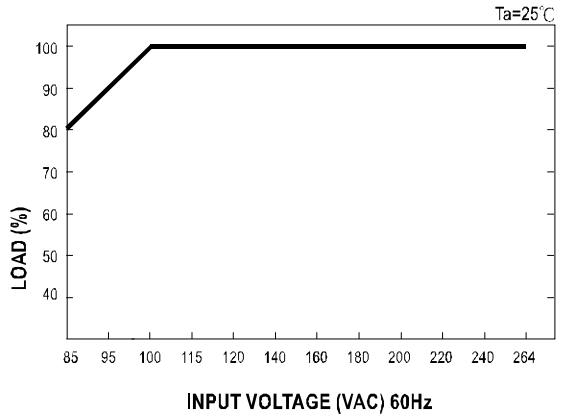
■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 96W Single Output Industrial DIN Rail Power Supply MDR-100 series

■ Features :

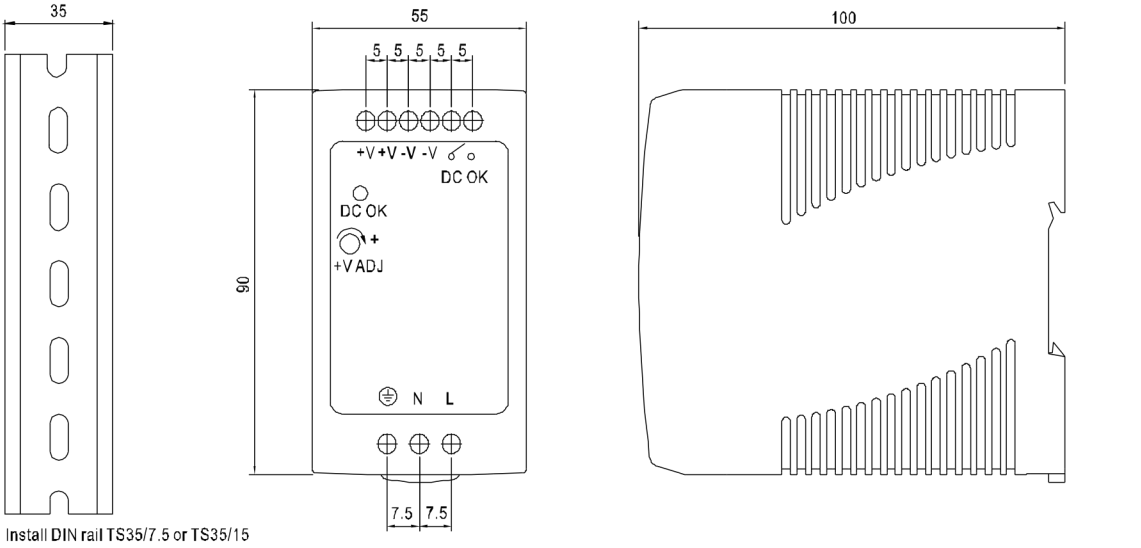
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- ZCS/ZVS technology to reduce power dissipation
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- DC OK relay contact
- No load power consumption<1W
- LED indicator for power on
- 100% full load burn-in test

SPECIFICATION

MODEL		MDR-100-12	MDR-100-24	MDR-100-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	7.5A	4A	2A
	CURRENT RANGE	0 ~ 7.5A	0 ~ 4A	0 ~ 2A
	RATED POWER	90W	96W	96W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 30V	48 ~ 56V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME Note.5	3000ms, 50ms/230VAC 3000ms, 50ms/115VAC at full load		
	HOLD UP TIME (Typ.)	50ms/230VAC 20ms/115VAC at full load		
INPUT	VOLTAGE RANGE Note.6	85 ~ 264VAC 120 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF≧0.95/230VAC PF≧0.98/115VAC at full load		
	EFFICIENCY (Typ.)	85%	86%	88%
	AC CURRENT (Typ.)	1.3A/115VAC 0.8A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 60A/230VAC		
	LEAKAGE CURRENT	<1mA / 240VAC		
PROTECTION	OVERLOAD	105 ~ 150% rated output power		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	15.6 ~ 18V	31.2 ~ 36V	57.6 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	90℃ ±10℃ (RTH2) detect on heatsink of power transistor		
		Protection type : Shut down o/p voltage, re-power on to recover		
FUNCTION	DC OK SIGNAL	Relay contact rating(max.): 30V/1A resistive		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	Component : 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ; Mounting : Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	Compliance to EN55011, EN55022 (CISPR22), EN61204-3 Class B, EN61000-3-2,-3		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2, EN61204-3, heavy industry level, criteria A		
OTHERS	MTBF	346K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	55*90*100mm (W*H*D)		
	PACKING	0.42Kg; 30pcs/13.6Kg/0.82CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 6. Deating maybe needed under low input voltages, please check the derating curve for more detail.			

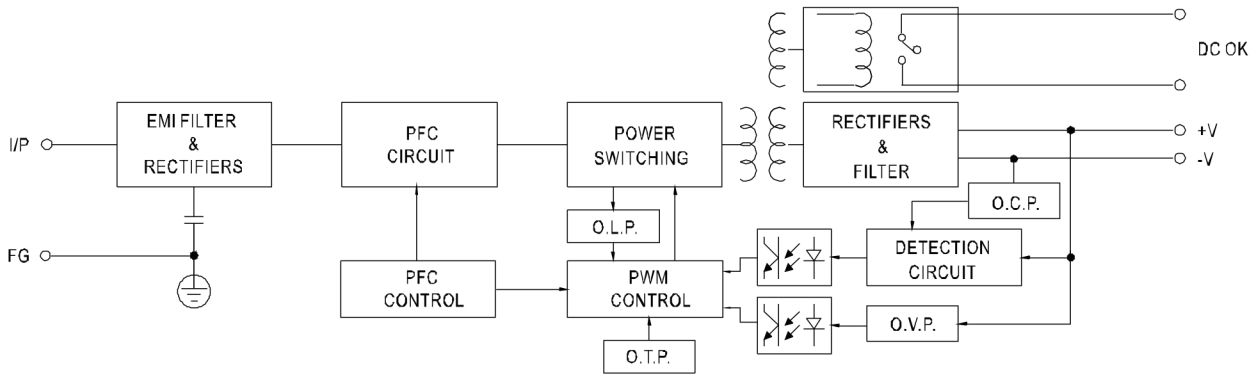
■ Mechanical Specification

Case No.973A Unit:mm



Install DIN rail TS35/7.5 or TS35/15

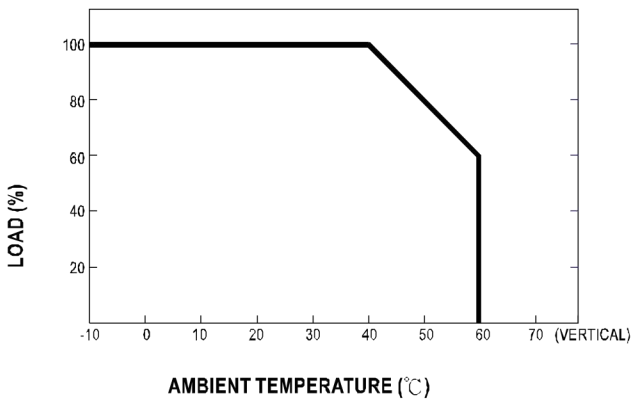
■ Block Diagram



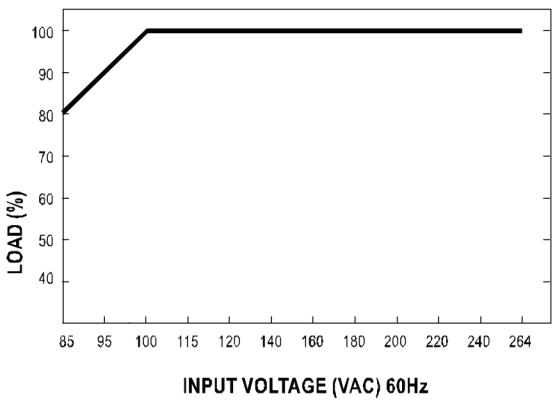
■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 35W Dual Output Switching Power Supply — NED-35 series

■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

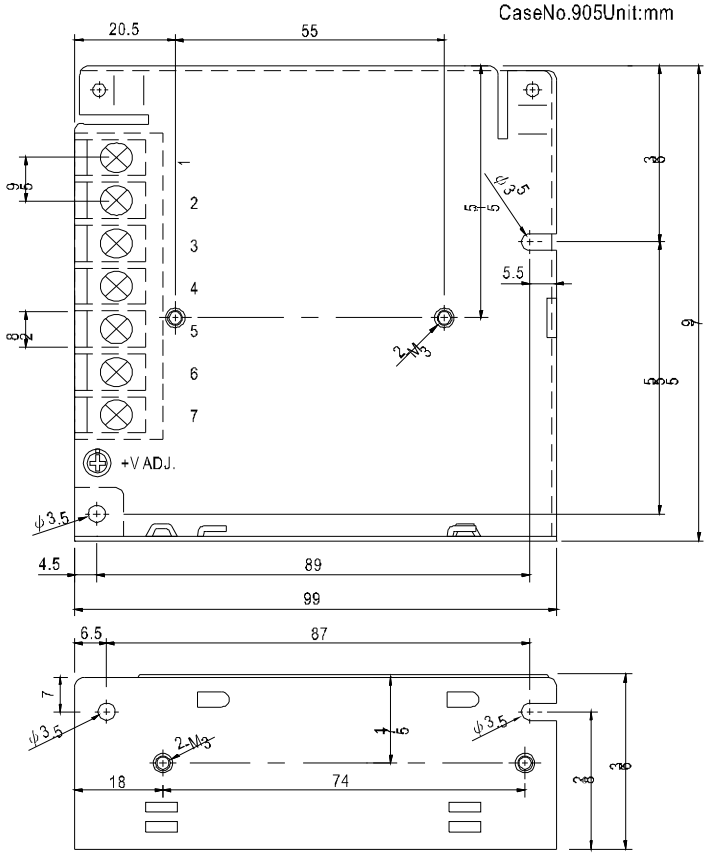
MODEL		NED-35A		NED-35B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	4A	1A	2.2A	1A
	CURRENT RANGE Note.6	0.5~5A	0.1~1.5A	0.5~4A	0.2~1.3A
	RATED POWER	32W		35W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75~5.5V		CH1:4.75~5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.5%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85~264VAC 120~370VDC			
	FREQUENCY RANGE	47~63Hz			
	EFFICIENCY (Typ.)	78%		81%	
	AC CURRENT (Typ.)	0.75A/115VAC 0.5 A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 45A			
	LEAKAGE CURRENT	<2mA / 240VAC			
PROTECTION	OVERLOAD	110~150% rated output power			
		Protection type: Hiccup mode, recovers automatically after fault condition is removed			
	OVERVOLTAGE	CH1:5.75~6.75V rated load and 25 of ambient temperature.			
		Protection type: Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20~+60 ℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20~90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40~+85 ℃, 10~95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0~45 ℃)			
	VIBRATION	10~500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note7)	SAFETY STANDARDS	UL60950-1, CB (IEC60950-1) approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25 /70%RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A			
OTHERS	MTBF	402.7Khrs min. MIL-HDBK-217F(25) ℃			
	DIMENSION	99*97*36mm (L*W*H)			
	PACKING	0.36Kg; 45pcs/17.2Kg/0.93CUFT			

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, r ℃
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair- wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load.
6. Each output can work within current range. But total output power can't exceed rated output power.
7. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to EMI testing of component power supplies.

■ MechanicalSpecification

CaseNo.905Unit:mm

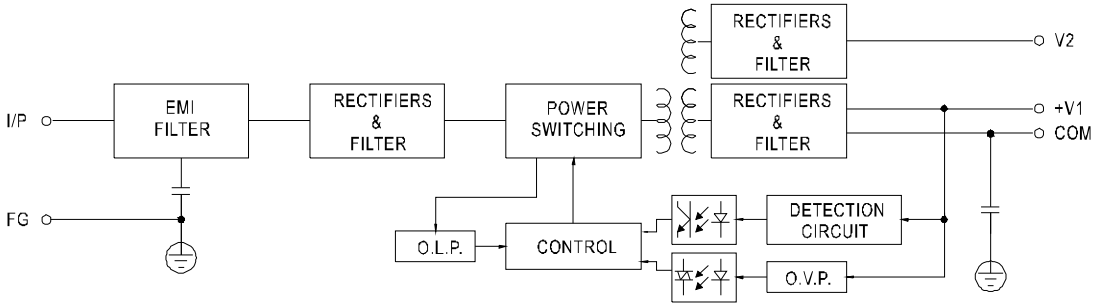


TerminalPinNo. Assignment

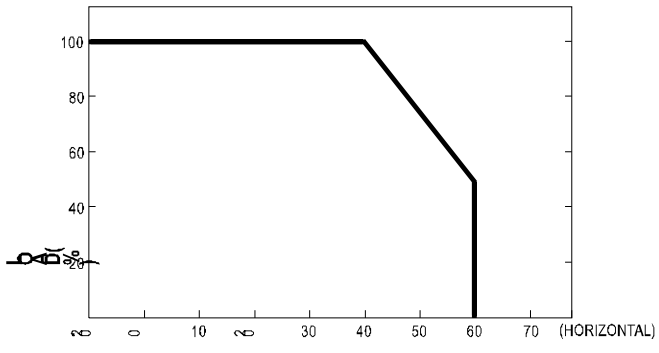
PinNo.	Assignment	PinNo.	Assignment
1	AC/L	5	DCOUTPUT +V2
2	AC/N	6	DCOUTPUT COM
3	FG ⏚	7	DCOUTPUT +V1
4	DCOUTPUT COM		

■ BlockDiagram

fosc:60KHz

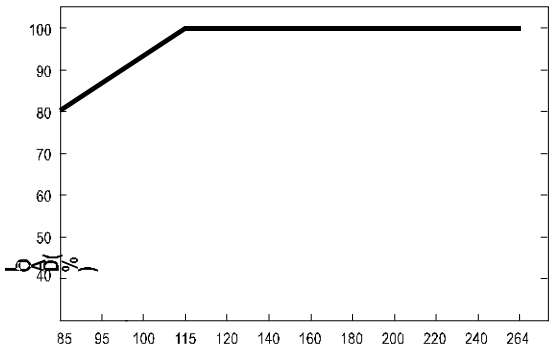


■ DeratingCurve



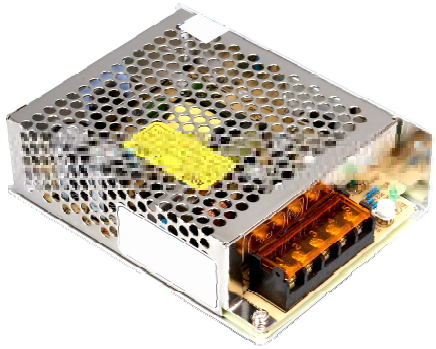
AMBIENTTEMPERATURE(℃)

■ OutputDeratingVSInputVoltage



INPUTVOLTAGE(VAC)60Hz

NIETZ 50W Dual Output Switching Power Supply **NED-50 series**



■ Features :

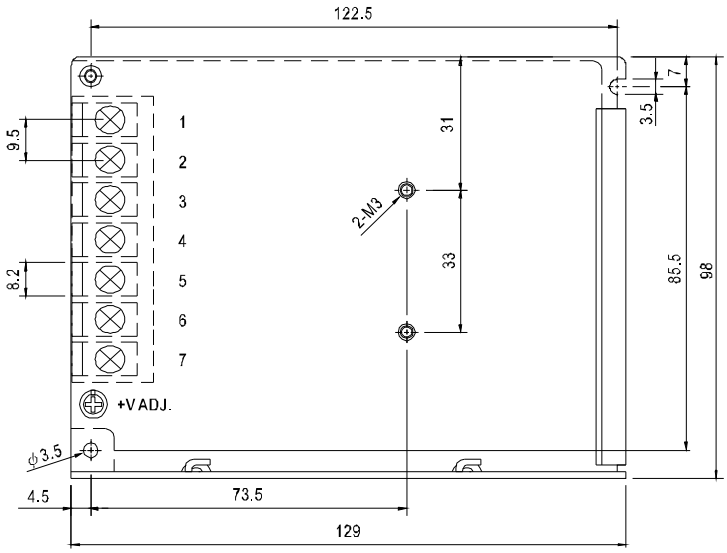
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

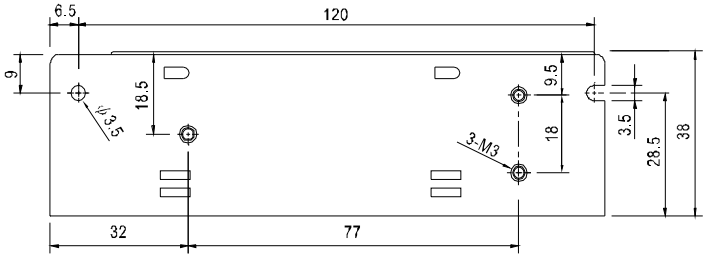
SPECIFICATION

MODEL		NED-50A		NED-50B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	6A	2A	4A	1.4A
	CURRENT RANGE Note.6	1 ~ 6A	0.3 ~ 3A	1 ~ 6A	0.2 ~ 2A
	RATED POWER	54W		53.6W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V		CH1: 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.5%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	79%		82%	
	AC CURRENT (Typ.)	1.1A/115VAC 0.65A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 45A			
	LEAKAGE CURRENT	<2mA / 240VAC			
PROTECTION	OVERLOAD	110 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V			
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A			
OTHERS	MTBF	413.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	129*98*38mm (L*W*H)			
	PACKING	0.44Kg; 45pcs/21Kg/1.24CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."				

■ Mechanical Specification

Case No. 903 Unit:mm



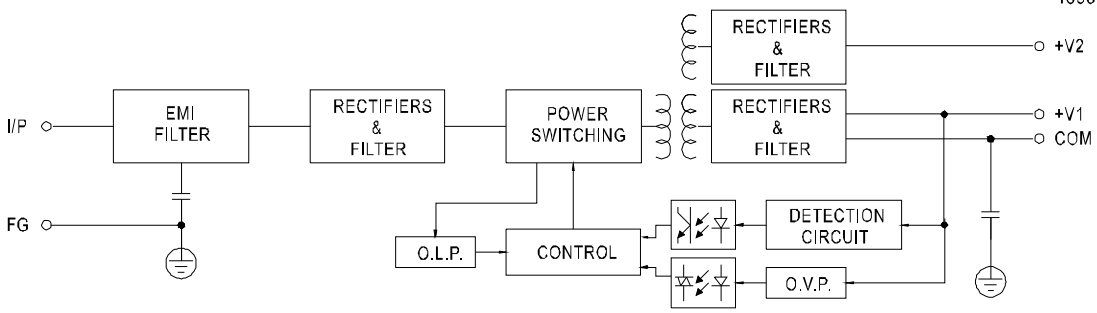


Terminal Pin No. Assignment

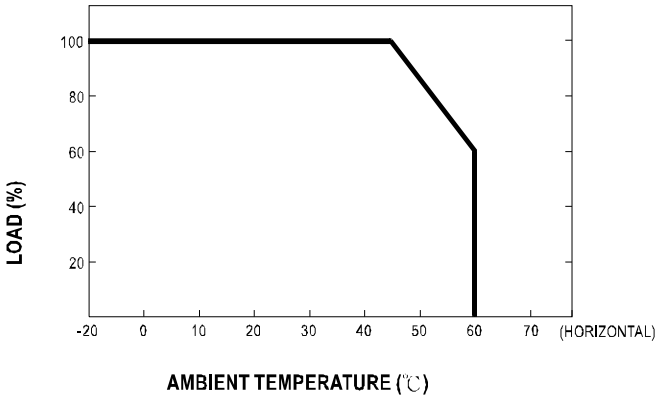
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT COM		

■ Block Diagram

fosc : 60KHz

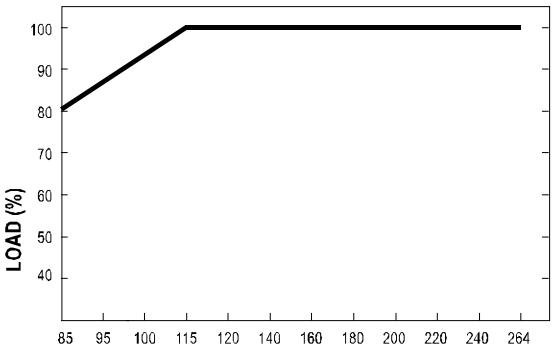


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 75W Dual Output Switching Power Supply NED-75 series

■ Features :

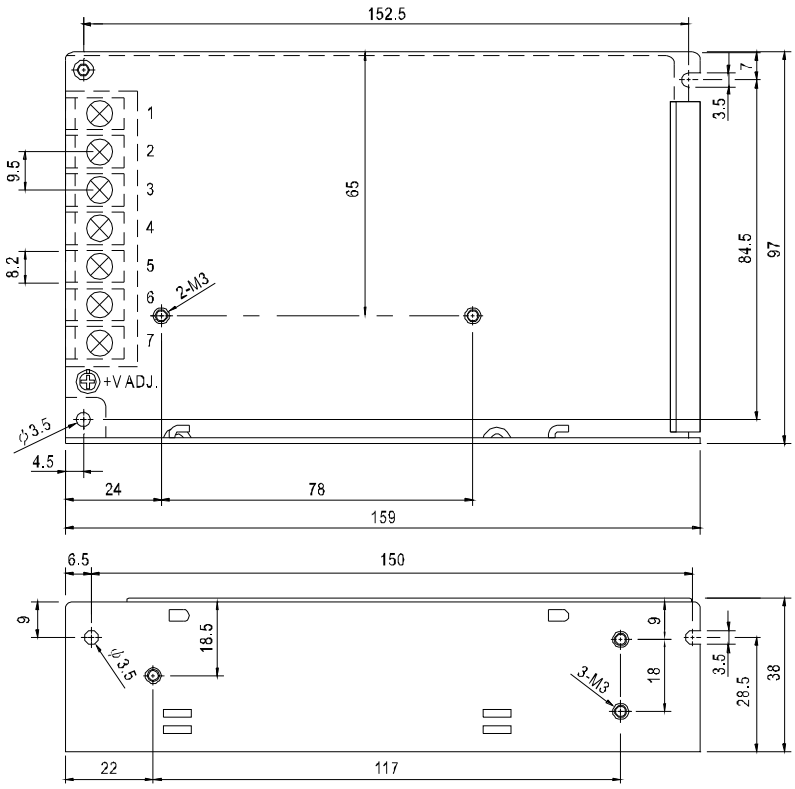
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NED-75A		NED-75B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	7A	3A	5A	2A
	CURRENT RANGE Note.6	1 ~ 8A	0.3 ~ 4A	1 ~ 6A	0.2 ~ 3A
	RATED POWER	71W		73W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V		CH1: 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.5%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	78%		81%	
	AC CURRENT (Typ.)	1.5A/115VAC 0.9A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 45A			
	LEAKAGE CURRENT	<2mA / 240VAC			
PROTECTION	OVERLOAD	110 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V			
		Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A			
OTHERS	MTBF	381.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.52Kg; 30pcs/16.6Kg/0.97CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

Case No. 901 Unit:mm

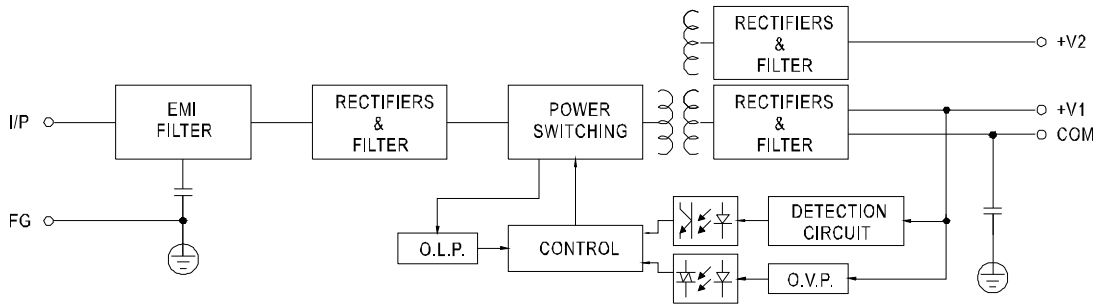


Terminal Pin No. Assignment

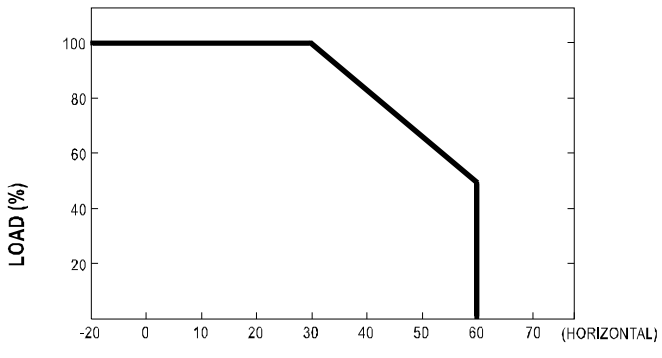
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT COM		

■ Block Diagram

fosc : 60KHz

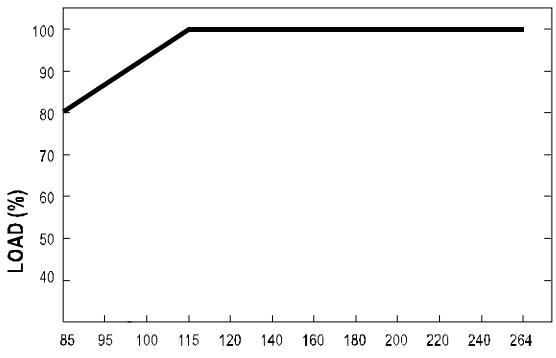


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 100W Dual Output Switching Power Supply NED-100 series

■ Features :

- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- 100% full load burn-in test

SPECIFICATION

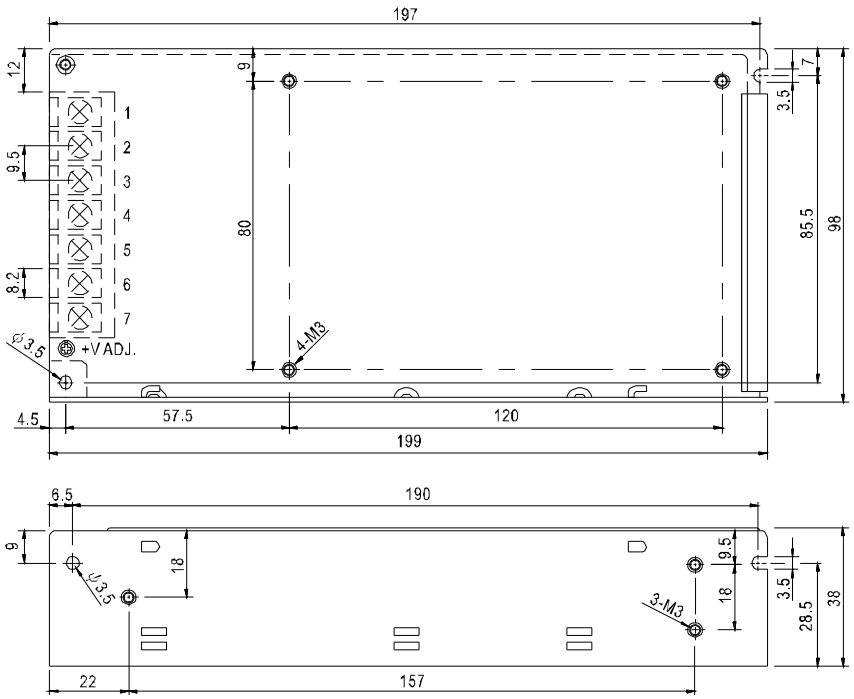
MODEL		NED-100A		NED-100B		NED-100C		NED-100D	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V	12V	5V	24V	5V
	RATED CURRENT	10A	4.2A	8A	2.5A	7A	3A	3.5A	3A
	CURRENT RANGE Note.6	2 ~ 10A	0.7 ~ 7.0A	1 ~ 10A	0.3 ~ 3.5A	0 ~ 8A	0 ~ 3A	0 ~ 4A	0 ~ 3A
	RATED POWER	100.4W		100W		99W		99W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	200mVp-p	120mVp-p	80mVp-p	120mVp-p	80mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V		CH1: 4.75 ~ 5.5V		CH1: 11.4 ~ 13.2V		CH1: 22.8 ~ 26.4V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±10%	±2.0%	±8.0%	±2.0%	±3.0%	±2.0%	±3.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±1.0%	±5.0%	±1.0%	±4.0%	±1.0%	±2.0%	±1.0%	±2.0%
	SETUP, RISE TIME	2000ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load							
	HOLD TIME (Typ.)	25ms/230VAC 20ms/115VAC at full load							
INPUT	VOLTAGE RANGE	88 ~ 132VAC / 176 ~ 264VAC selected by switch 248 ~ 373VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	80%		82%		80%		82%	
	AC CURRENT (Typ.)	2A/115VAC 1.2A/230VAC							
	INRUSH CURRENT (Typ.)	COLD START 45A							
	LEAKAGE CURRENT	<2mA / 240VAC							
PROTECTION	OVER LOAD	110 ~ 150% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V		CH2: 5.75 ~ 6.75V		CH1: 13.8 ~ 15.8V		CH2: 27.6 ~ 32.4V	
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)on Ch1 output							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) Approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC							
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B							
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3							
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024,EN61000-6-1,light industry level, criteria A							
OTHERS	MTBF	320.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	199*98*38mm (L*W*H)							
	PACKING	0.55Kg; 30pcs/17.5Kg/0.97CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load.
6. Each output can work within current range. But total output power can't exceed rated output power.
7. The power supply is considered a component which will be installed into a final equipment.

■ Mechanical Specification

Case No. 902 Unit:mm

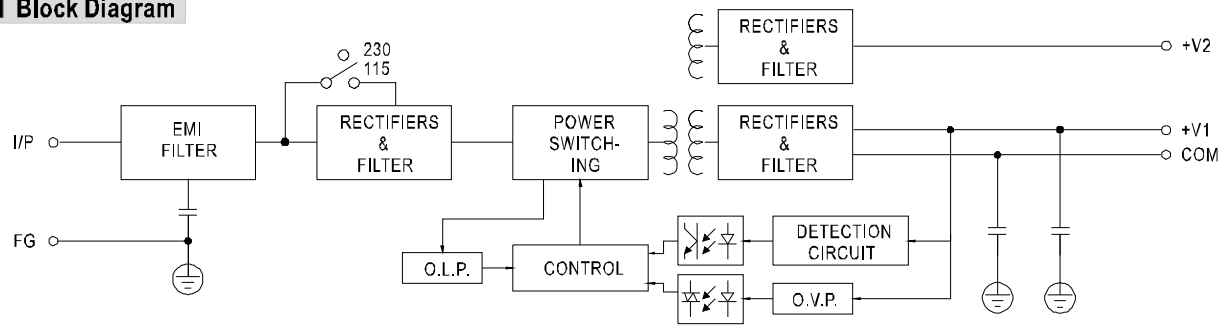


Terminal Pin No. Assignment

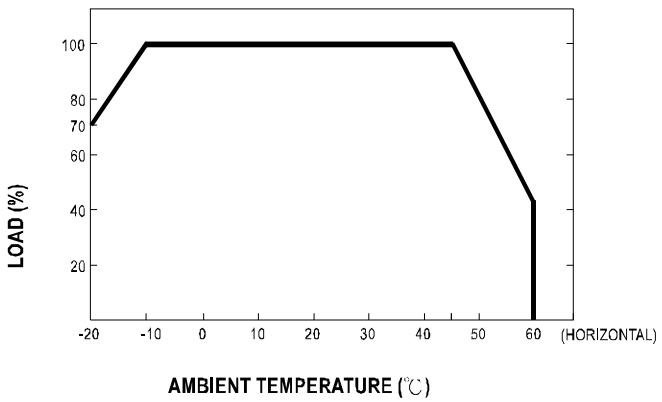
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	4,6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1

■ Block Diagram

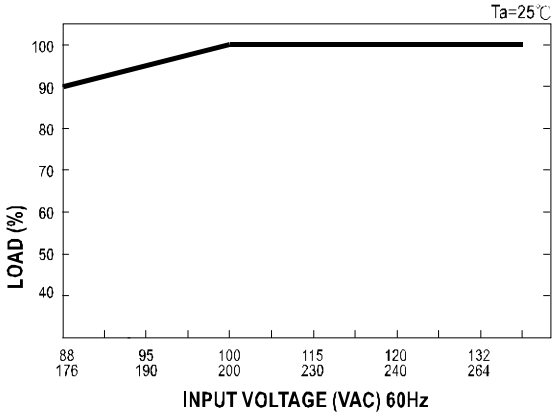
fosc : 55KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 15W Single Output Switching Power Supply **NES-15 series**

■ Features :

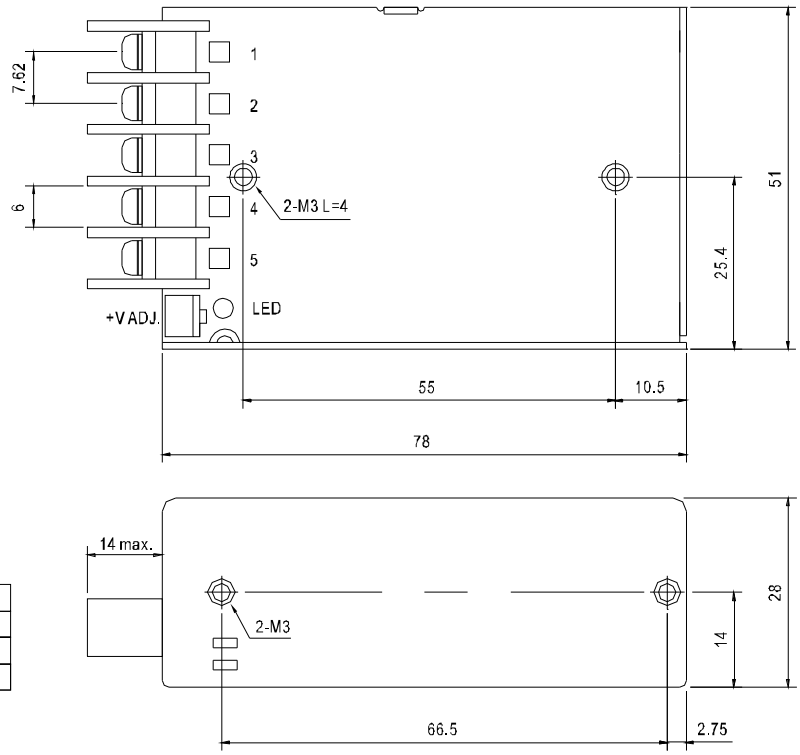
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NES-15-5	NES-15-12	NES-15-15	NES-15-24	NES-15-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	3A	1.3A	1A	0.7A	0.35A
	CURRENT RANGE	0 ~ 3A	0 ~ 1.3A	0 ~ 1A	0 ~ 0.7A	0 ~ 0.35A
	RATED POWER	15W	15.6W	15W	16.8W	16.8W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 30ms/230VAC 1000ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	100ms/230VAC 20ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	79%	81%	81%	85%	82%
	AC CURRENT (Typ.)	0.35A/115VAC 0.25A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 45A				
	LEAKAGE CURRENT	<2mA / 240VAC				
PROTECTION	OVERLOAD	Above 105% rated output power				
		Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Shut off				
	OVER TEMPERATURE	U1 Tj 140℃ typically (U1) detect on main control IC				
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1),CCC GB4943 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A				
OTHERS	MTBF	563.5Khrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	78*51*28mm (L*W*H)				
	PACKING	0.18Kg; 60pcs/11.8Kg/0.46CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load. 6. The power supply is considered a component which will be installed into a final equipment.					

■ Mechanical Specification

Case No. 931A Unit:mm

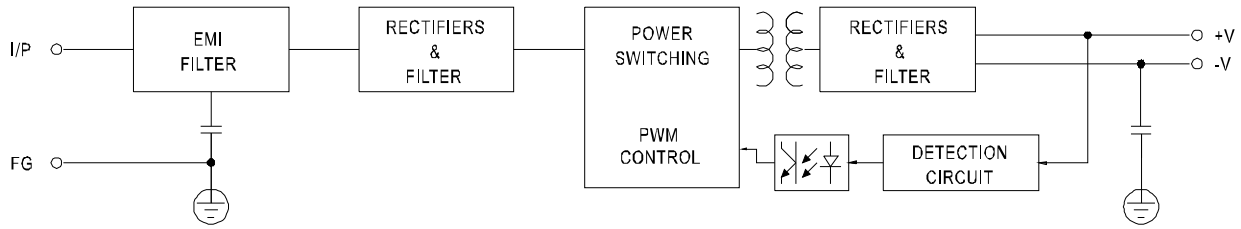


Terminal Pin No. Assignment

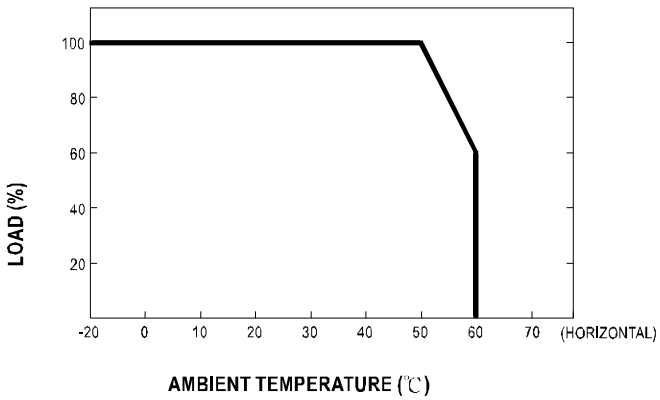
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

fosc : 67KHz

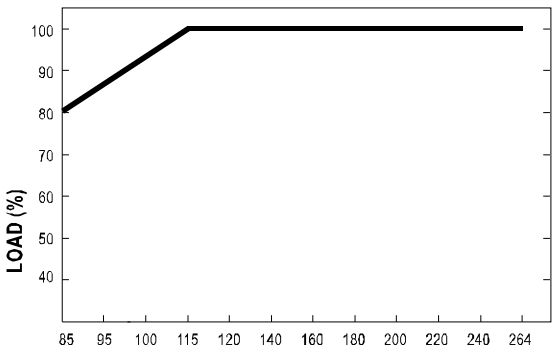


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 25W Single Output Switching Power Supply **NES-25 series**

■ Features :

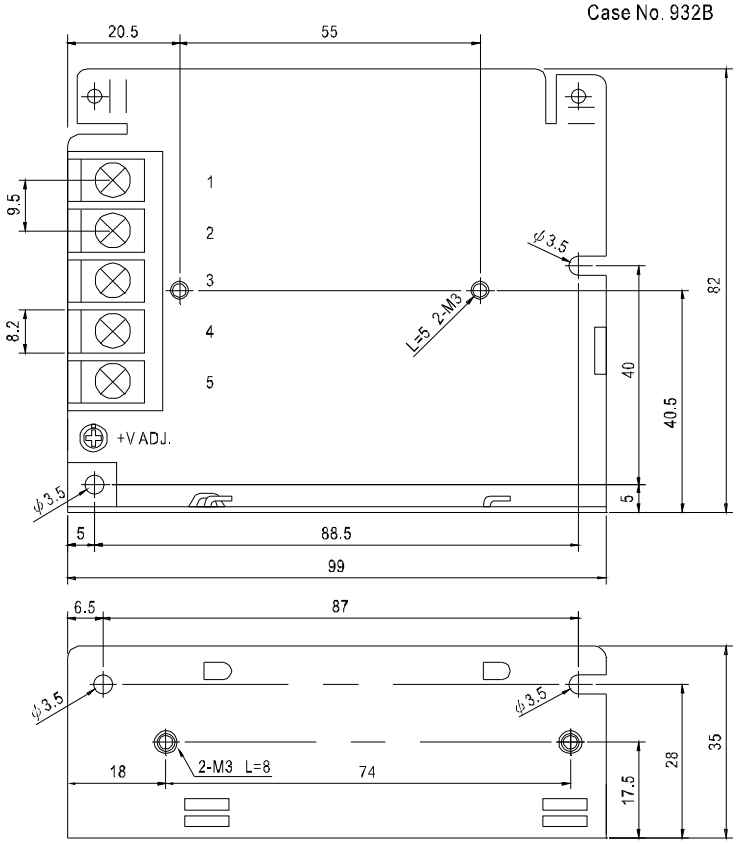
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NES-25-5	NES-25-12	NES-25-15	NES-25-24	NES-25-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	5A	2.1A	1.7A	1.1A	0.57A
	CURRENT RANGE	0 ~ 5A	0 ~ 2.1A	0 ~ 1.7A	0 ~ 1.1A	0 ~ 0.57A
	RATED POWER	25W	25.2W	25.5W	26.4W	27.36W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	78%	83%	84%	86%	86%
	AC CURRENT (Typ.)	0.55A/115VAC 0.35A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 45A				
	LEAKAGE CURRENT	<2mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power				
		Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1),CCC GB4943 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, EN55024, EN61000-6-1, light industry level, criteria A				
OTHERS	MTBF	411.47Khrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	99*82*35mm (L*W*H)				
	PACKING	0.3Kg; 45pcs/14.5Kg/0.66CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load. 6. The power supply is considered a component which will be installed into a final equipment.					

■ Mechanical Specification

Case No. 932B Unit:mm

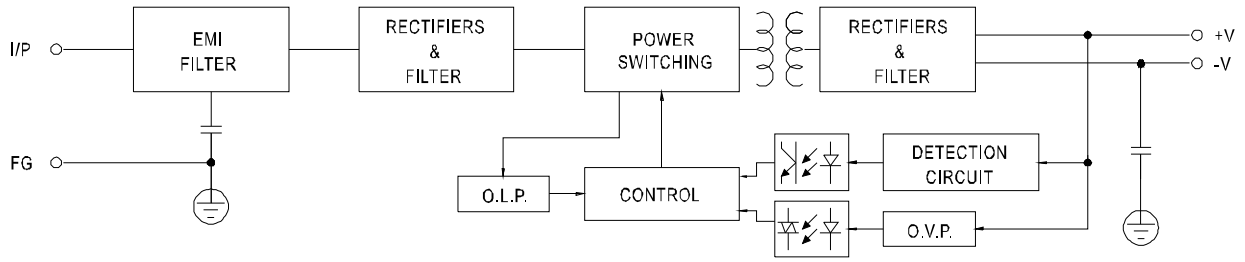


Terminal Pin No. Assignment

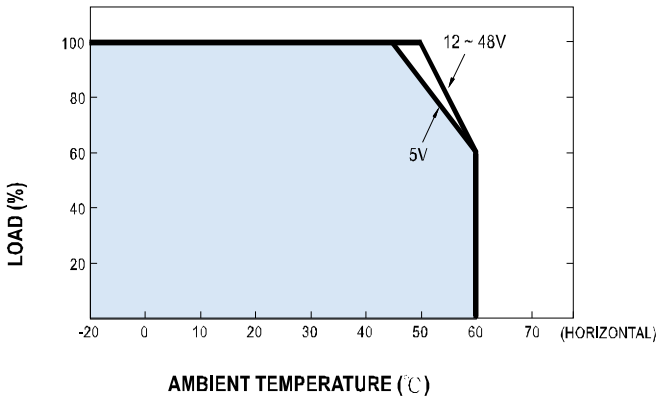
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

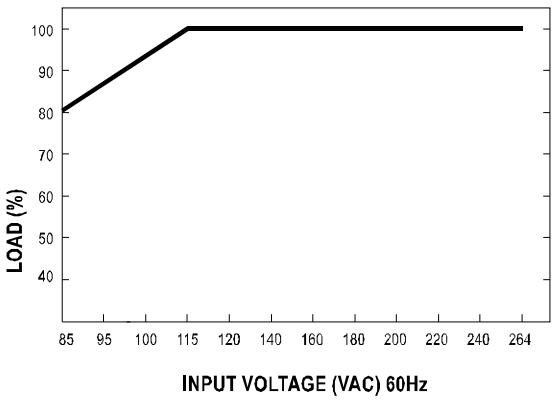
fosc : 60KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 35W Single Output Switching Power Supply NES-35 series

■ Features :

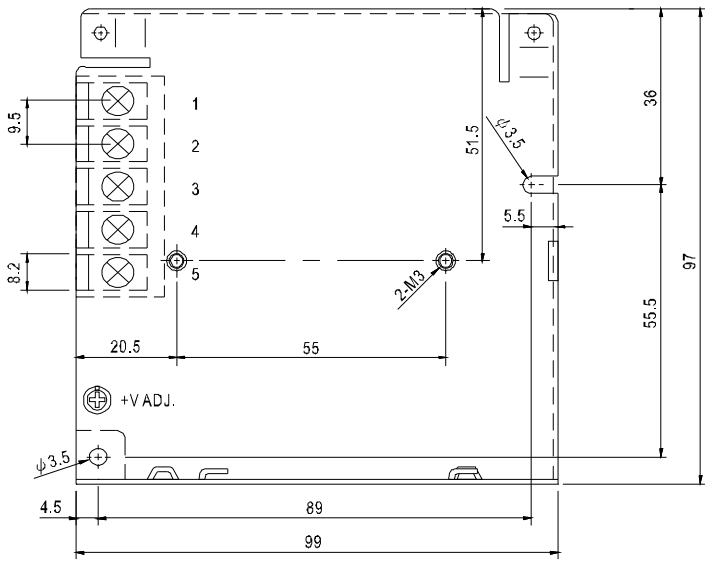
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

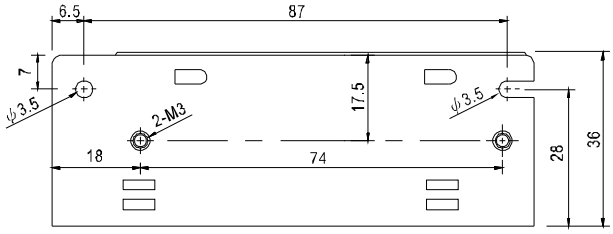
SPECIFICATION

MODEL		NES-35-5	NES-35-12	NES-35-15	NES-35-24	NES-35-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	7A	3A	2.4A	1.5A	0.8A
	CURRENT RANGE	0 ~ 7A	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A	0 ~ 0.8A
	RATED POWER	35W	36W	36W	36W	38.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	78%	81%	83%	85%	86%
	AC CURRENT (Typ.)	0.75A/115VAC 0.5 A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 45A				
	LEAKAGE CURRENT	<2mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power				
		Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1),CCC GB4943 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, EN55024, EN61000-6-1, light industry level, criteria A				
OTHERS	MTBF	394Khrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	99*97*36mm (L*W*H)				
	PACKING	0.36Kg; 45pcs/17.2Kg/0.93CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load. 6. The power supply is considered a component which will be installed into a final equipment.					

■ Mechanical Specification

Case No. 905 Unit:mm



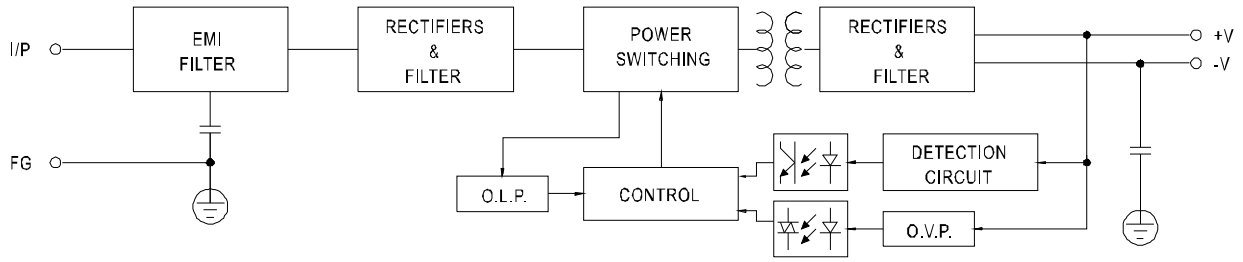


Terminal Pin No. Assignment

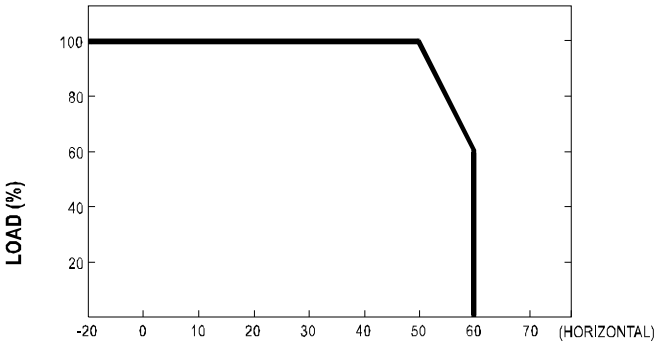
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

fosc : 60KHz

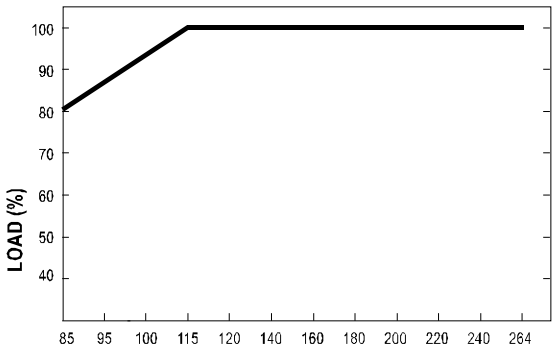


■ Derating Curve



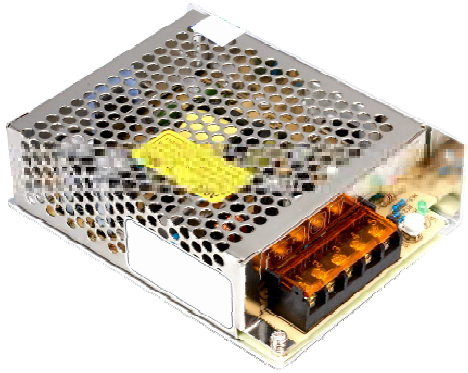
AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 50W Single Output Switching Power Supply **NES-50 series**



■ Features :

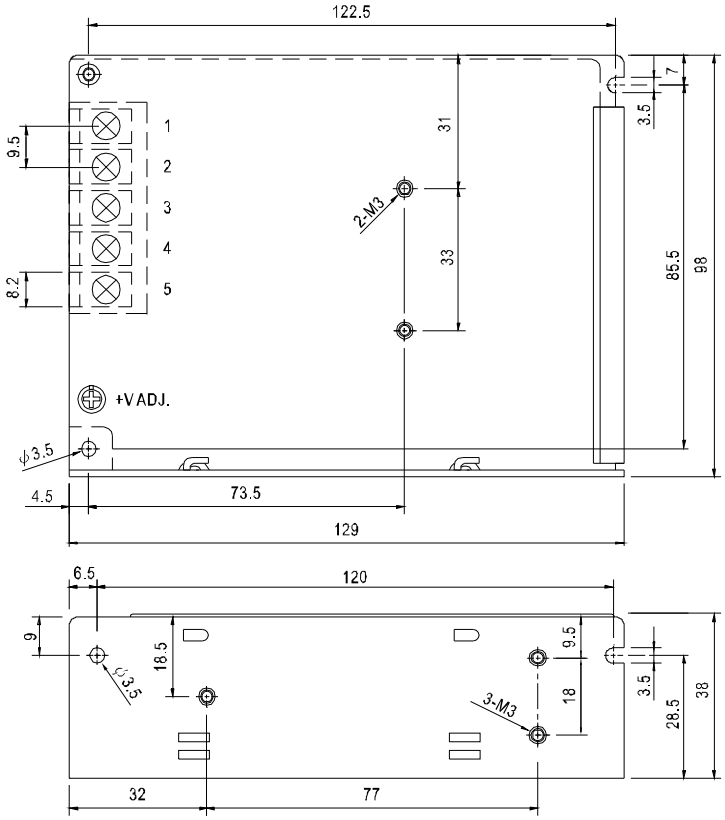
- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NES-50-5	NES-50-12	NES-50-15	NES-50-24	NES-50-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V
	RATED CURRENT	10A	4.2A	3.4A	2.2A	1.1A
	CURRENT RANGE	0 ~ 10A	0 ~ 4.2A	0 ~ 3.4A	0 ~ 2.2A	0 ~ 1.1A
	RATED POWER	50W	50.4W	51W	52.8W	52.8W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY(Typ.)	79%	82%	83%	86%	87%
	AC CURRENT (Typ.)	1.1A/115VAC 0.65A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 45A				
	LEAKAGE CURRENT	<2mA / 240VAC				
PROTECTION	OVERLOAD	110 ~ 150% rated output power				
		Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1),CCC GB4943 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH				
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A				
OTHERS	MTBF	374.2K hrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	129*98*38mm (L*W*H)				
	PACKING	0.41Kg; 45pcs/19.5Kg/1.24CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load. 6. The power supply is considered a component which will be installed into a final equipment.					

■ Mechanical Specification

Case No. 903 Unit:mm

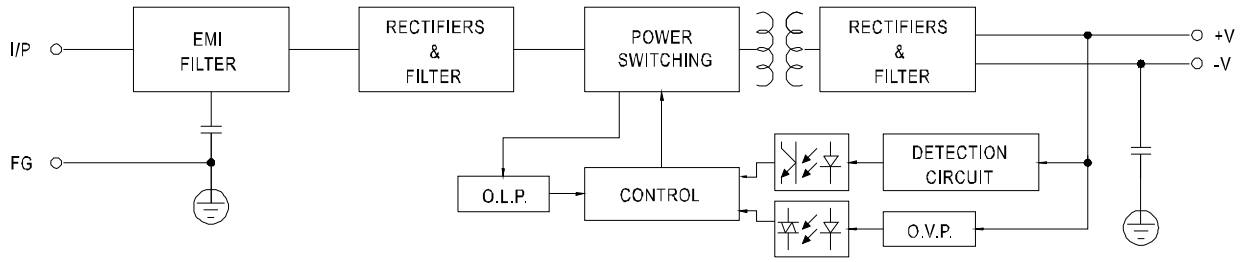


Terminal Pin No. Assignment

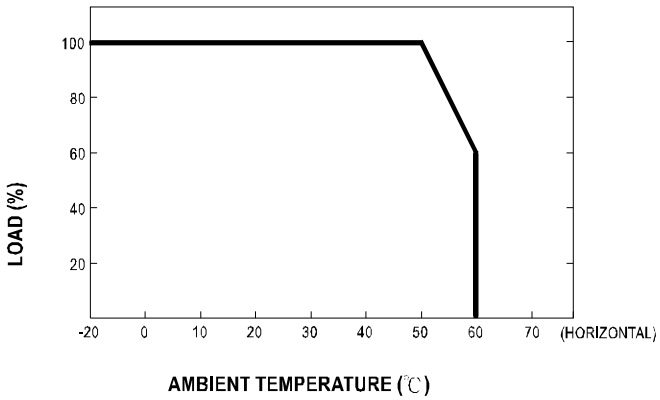
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

fosc : 60KHz

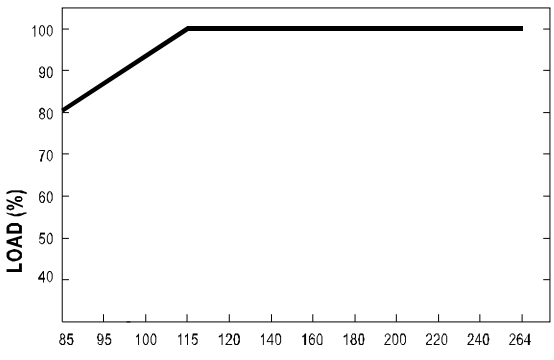


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 100W Single Output Switching Power Supply NES-100 series

■ Features :

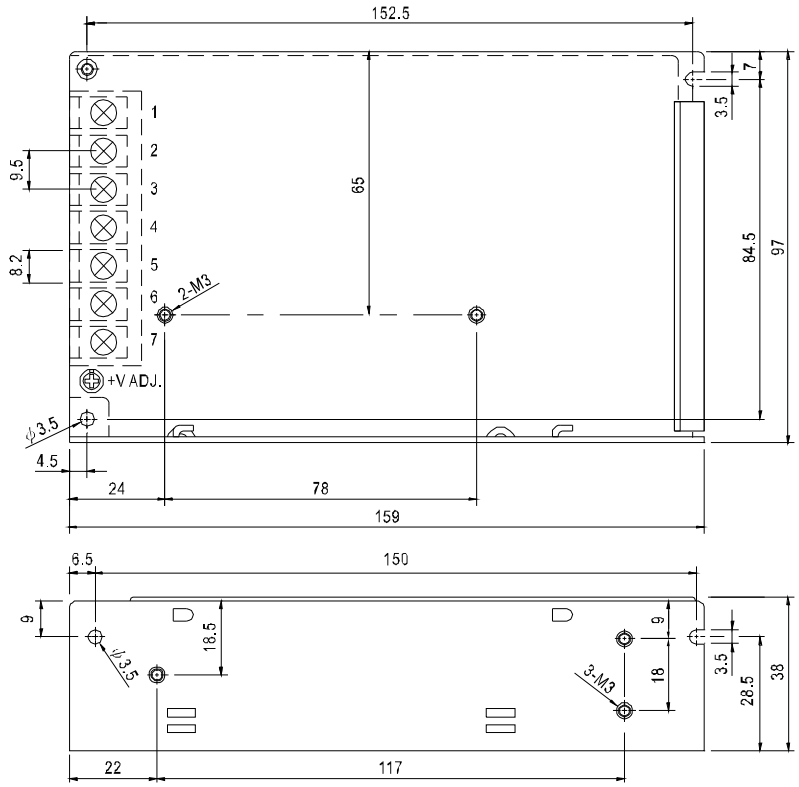
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- 100% full load burn-in test

SPECIFICATION

MODEL		NES-100-5	NES-100-7.5	NES-100-9	NES-100-12	NES-100-15	NES-100-24	NES-100-48
OUTPUT	DC VOLTAGE	5V	7.5V	9V	12V	15V	24V	48V
	RATED CURRENT	20A	13.6A	11.2A	8.5A	7A	4.5A	2.3A
	CURRENT RANGE	0 ~ 20A	0 ~ 13.6A	0 ~ 11.2A	0 ~ 8.5A	0 ~ 7A	0 ~ 4.5A	0 ~ 2.3A
	RATED POWER	100W	102W	100.8W	102W	105W	108W	110.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	120mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	7.13 ~ 8.3V	8.55 ~ 9.9V	11.4 ~ 13.2V	14.25 ~ 16.5V	22.8 ~ 26.4V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 20ms/230VAC 500ms, 20ms/115VAC at full load						
	HOLD UP TIME (Typ.)	30ms/230VAC 25ms/115VAC at full load						
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 176 ~ 264VAC selected by switch 248 ~ 373VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	EFFICIENCY (Typ.)	80%	81%	81%	83%	84%	86%	86%
	AC CURRENT (Typ.)	2A/115VAC 1.2A/230VAC						
	INRUSH CURRENT (Typ.)	COLD START 36A						
	LEAKAGE CURRENT	<2mA / 240VAC						
PROTECTION	OVERLOAD	110 ~ 150% rated output power						
		Protection type : Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	5.75 ~ 6.75V	8.6 ~ 10.1V	10.4 ~ 12.2V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed						
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes						
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1),CCC GB4943 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH						
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A						
OTHERS	MTBF	320.7Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	159*97*38mm (L*W*H)						
	PACKING	0.55Kg; 30pcs/17.5Kg/0.97CUFT						
NOTE	1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 0% to 100% rated load. 6. The power supply is considered a component which will be installed into a final equipment.							

■ Mechanical Specification

Case No. 901 Unit:mm

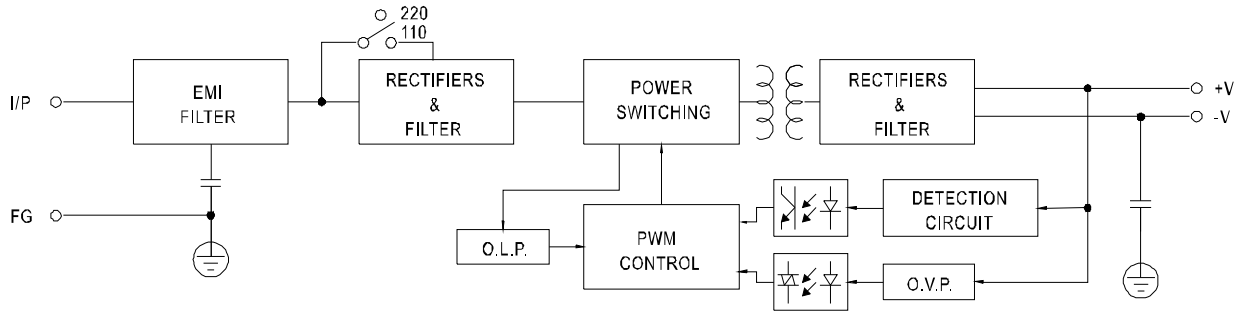


Terminal Pin No. Assignment

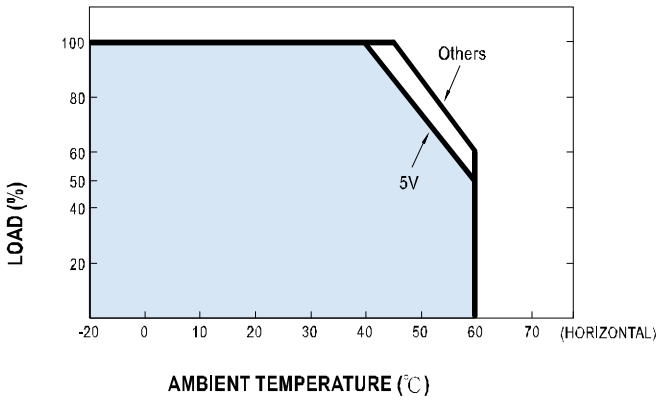
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

fosc : 60KHz

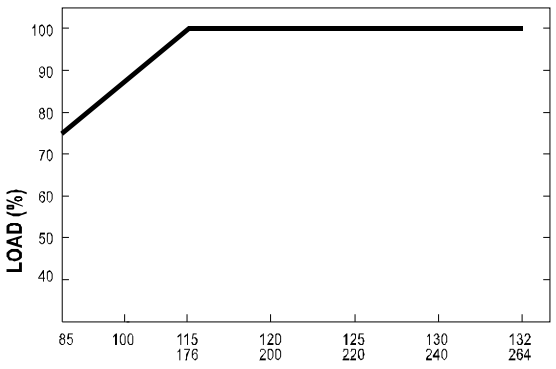


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE (VAC) 60Hz

NIETZ 150W Single Output Switching Power Supply NES-150 series

■ Features :

- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- 100% full load burn-in test
- High efficiency, long life and high reliability

SPECIFICATION

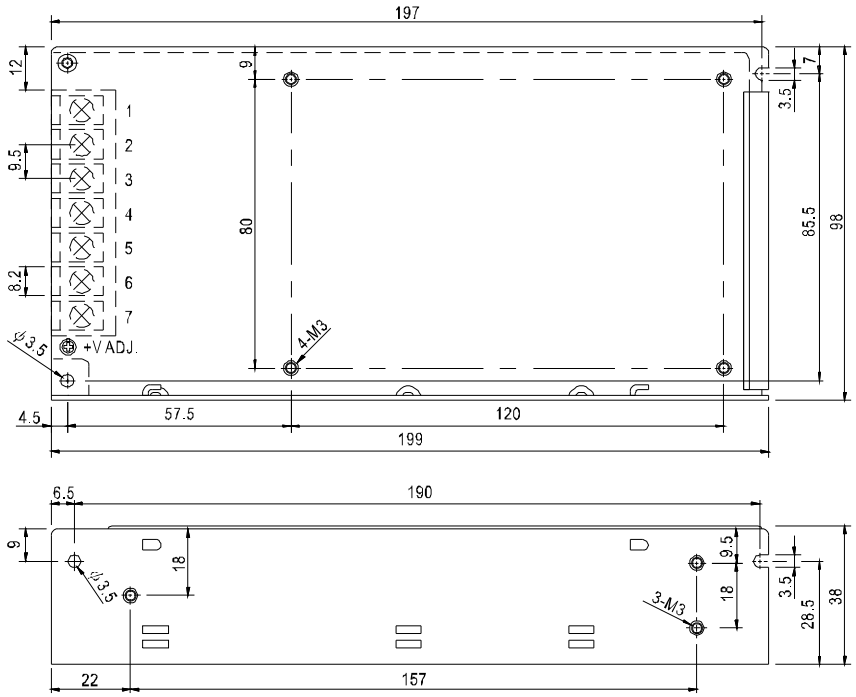
MODEL		NES-150-3.3	NES-150-5	NES-150-7.5	NES-150-9	NES-150-12	NES-150-15	NES-150-24	NES-150-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	9V	12V	15V	24V	48V
	RATED CURRENT	30A	26A	20A	16.7A	12.5A	10A	6.5A	3.3A
	CURRENT RANGE	0 ~ 30A	0 ~ 26A	0 ~ 20A	0 ~ 16.7A	0 ~ 12.5A	0 ~ 10A	0 ~ 6.5A	0 ~ 3.3A
	RATED POWER	99W	130W	150W	150W	150W	150W	156W	158.4W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p	120mVp-p	120mVp-p	120mVp-p	120mVp-p	120mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	3.2 ~ 3.5V	4.75 ~ 5.5V	7.13 ~ 8.3V	8.55 ~ 9.9V	11.4 ~ 13.5V	14.25 ~ 16.5V	22.8 ~ 27.6V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	800ms, 20ms/230VAC 1200ms, 30ms/115VAC at full load							
	HOLD UP TIME (Typ.)	24ms/230VAC 20ms/115VAC at full load							
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC selected by switch 254 ~ 373VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	73%	78%	80%	83%	83%	83%	86%	86%
	AC CURRENT (Typ.)	3A/115VAC 2A/230VAC							
	INRUSH CURRENT (Typ.)	COLD START 45A/230VAC							
	LEAKAGE CURRENT	<2mA / 240VAC							
PROTECTION	OVERLOAD	110 ~ 150% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.8 ~ 4.65V	5.75 ~ 6.75V	8.6 ~ 10.1V	10.4 ~ 12.2V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 62.4V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 6)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1,GB4943 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC 70% RH							
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B,GB9254 CLASS B							
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3,GB17625.1							
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, EN61000-6-1, heavy industry level, criteria A							
OTHERS	MTBF	433.3Khrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	199*98*38mm (L*W*H)							
	PACKING	0.7Kg; 20pcs/15Kg/0.72CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 0% to 100% rated load.
6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.

■ Mechanical Specification

Case No. 902 Unit:mm

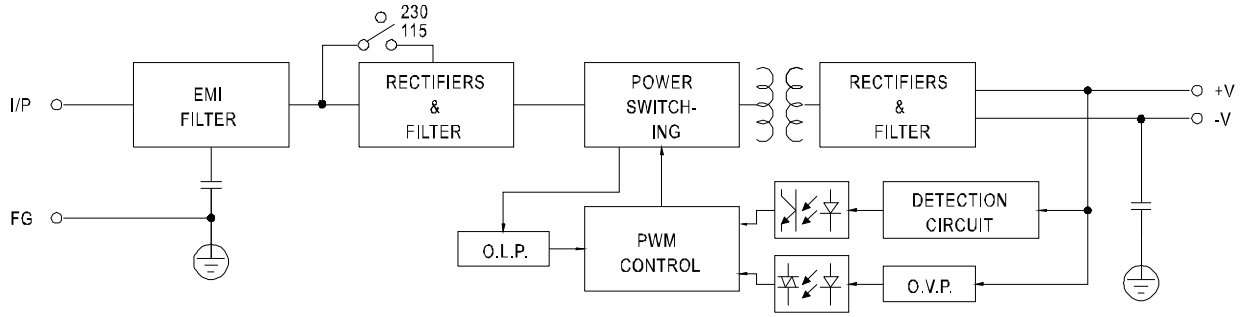


Terminal Pin No. Assignment

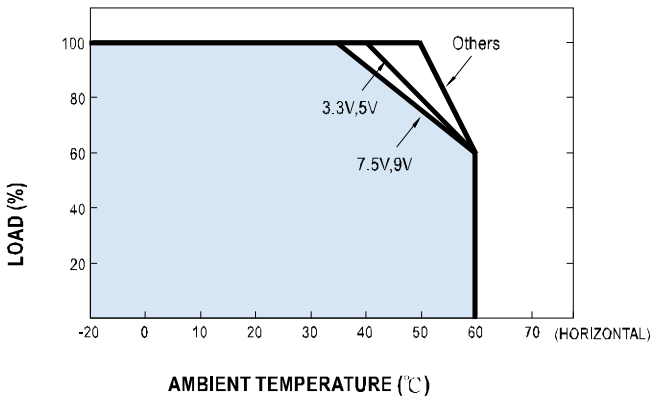
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

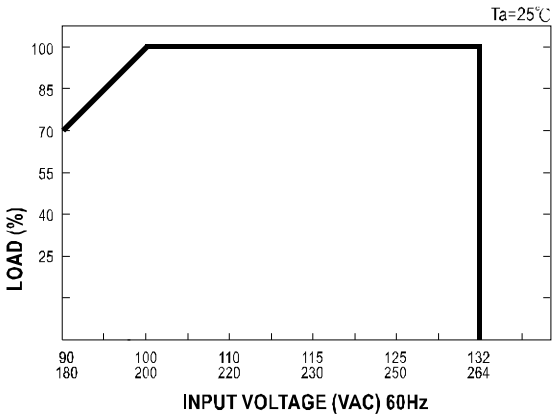
fosc : 65KHz



■ Derating Curve



■ Static Characteristics



NIETZ 200W Single Output Switching Power Supply **NES-200 series**

■ Features :

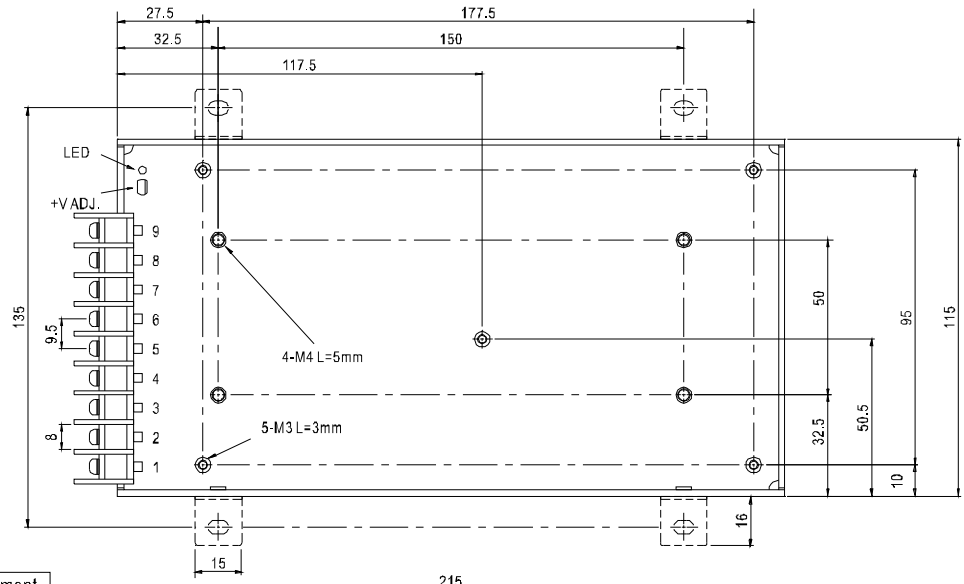
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Cooling by free air convection
- Withstand 300vac surge input for 5 second
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indicator for power on
- Fixed switching frequency at 90KHz
- Low cost,high reliability

SPECIFICATION

MODEL		NES-200-3.3	NES-200-5	NES-200-7.5	NES-200-12	NES-200-15	NES-200-24	NES-200-27	NES-200-36	NES-200-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	40A	40A	27A	17A	14A	8.8A	7.8A	5.9A	4.4A
	CURRENT RANGE	0 ~ 40A	0 ~ 40A	0 ~ 27A	0 ~ 17A	0 ~ 14A	0 ~ 8.8A	0 ~ 7.8A	0 ~ 5.9A	0 ~ 4.4A
	RATED POWER	132W	200W	202.5W	204W	210W	211.2W	210.6W	212.4W	211.2W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.7V	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.5V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	32 ~ 40V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.5%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load								
	HOLD UP TIME	20ms/230VAC 16ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY (Typ.)	75%	79%	82%	85%	85%	87%	88%	89%	89%
	AC CURRENT	4.5A/115VAC 2.5A/230VAC								
	INRUSH CURRENT (max.)	40A/115VAC 55A/230VAC								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVER LOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.8 ~ 4.9V	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	41.4 ~ 46.8V	57.6 ~ 67.2V
		Protection type :Shut down O/P voltage, re-power on to recover								
	OVER TEMPERATURE	95℃±5℃(3.3V);100℃±5℃(5V); 90℃±5℃(7.5V);85℃±5℃(12~24V);80℃±5℃(27~36V);75℃±5℃(48V) (TSW1) Detect on case								
		Protection type : Shut down O/P voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-20 ~ +50℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMI CONDUCTION & RADIATION	Design refer to EN55022 (CISPR22) Class A								
	EMS IMMUNITY	Design refer to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, light industry level, criteria A								
OTHERS	MTBF	271.9K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	215*115*50mm (L*W*H)								
	PACKING	0.93Kg; 12pcs/12Kg/0.92CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.									

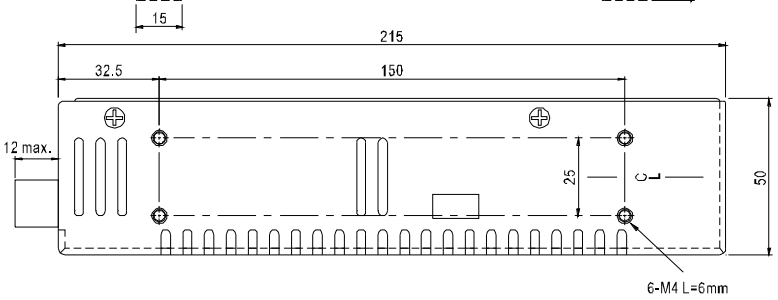
■ Mechanical Specification

Case No. 912E Unit:mm



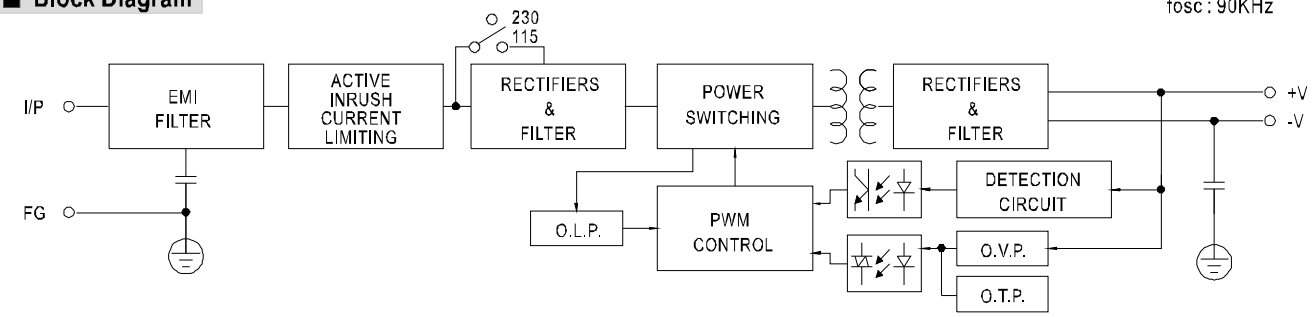
Terminal pin number assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

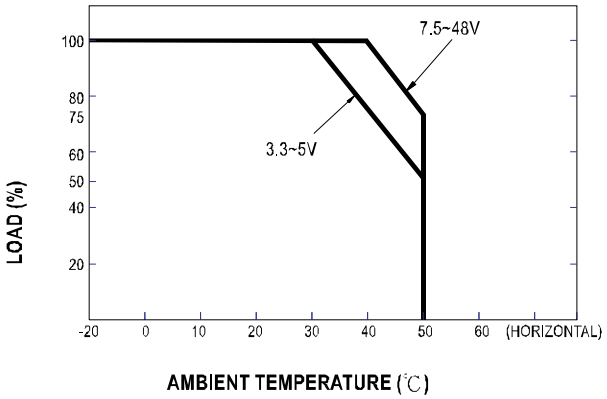


■ Block Diagram

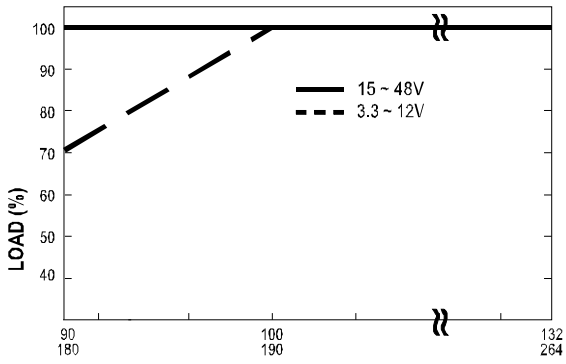
fosc : 90KHz



■ Derating Curve



■ Static Characteristics



NIETZ 350W Single Output Switching Power Supply NES-350 series

■ Features :

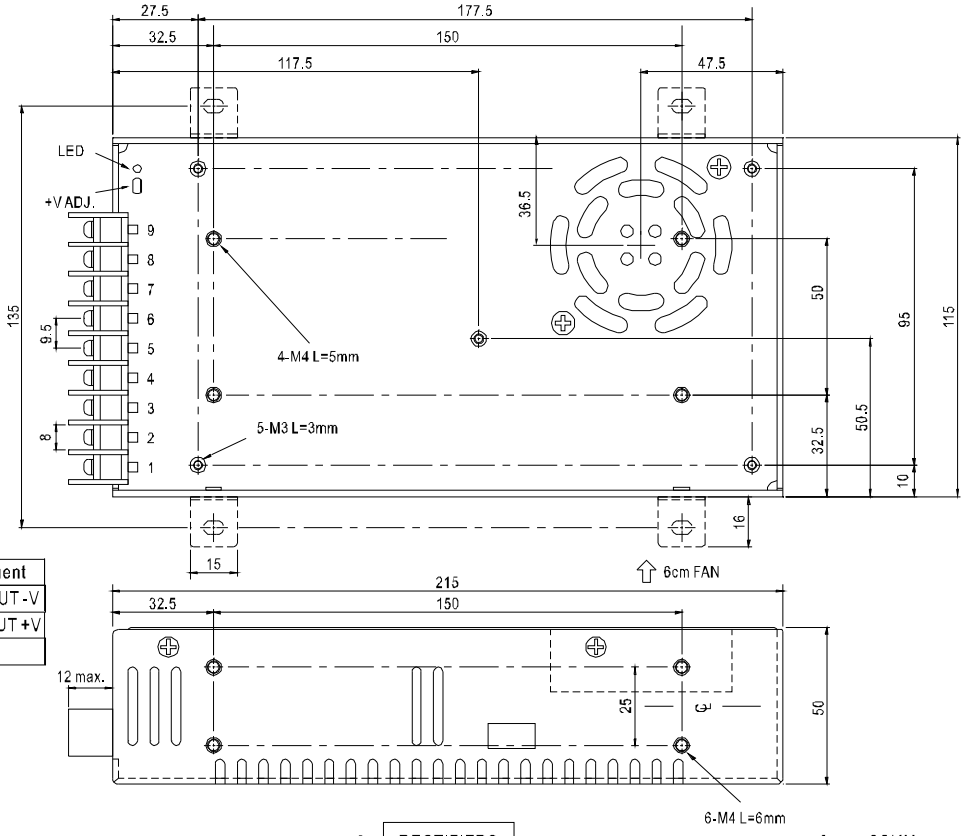
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Forced air cooling by built-in DC fan
- Withstand 300vac surge input for 5 second
- Built-in cooling Fan ON-OFF control
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indicator for power on
- Fixed switching frequency at 90KHz
- Low cost,high reliability

SPECIFICATION

MODEL		NES-350-3.3	NES-350-5	NES-350-7.5	NES-350-12	NES-350-15	NES-350-24	NES-350-27	NES-350-36	NES-350-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	60A	60A	46A	29A	23.2A	14.6A	13A	9.7A	7.3A
	CURRENT RANGE	0 ~ 60A	0 ~ 60A	0 ~ 46A	0 ~ 29A	0 ~ 23.2A	0 ~ 14.6A	0 ~ 13A	0 ~ 9.7A	0 ~ 7.3A
	RATED POWER	198W	300W	345W	348W	348W	350.4W	351W	349.2W	350.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.7V	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.5V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	32~40V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	+3%,-4.5%	±3.0%	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.5%	±2.0%	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load								
	HOLD UP TIME (Typ.)	20ms/230VAC 16ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY (Typ.)	74%	78%	80%	83%	84%	87%	88%	87.5%	87.5%
	AC CURRENT (Typ.)	7A/115VAC 4A/230VAC								
	INRUSH CURRENT (Typ.)	40A/115VAC 60A/230VAC								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVER LOAD	105 ~ 135% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.8 ~ 4.6V	5.75 ~ 7.5V	9.4 ~ 11.25V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	41.4~46.8V	57.6 ~ 67.2V
		Protection type :Shut down O/P voltage, re-power on to recover								
	OVER TEMPERATURE	85℃±5℃(3.3~7.5V); 80℃±5℃(12V); 75℃±5℃(15~48V) (TSW1) Detect on case								
		Protection type : Shut down O/P voltage, recovers automatically after temperature goes down								
FUNCTION	FAN ON/OFF CONTROL(Typ.)	RTH2＞50℃ FAN ON, ＜45℃ FAN OFF (3.3 ~ 7.5V)								
		RTH2≧55℃ FAN ON, ≦50℃ FAN OFF (12 ~ 48V)								
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH								
	EMI CONDUCTION & RADIATION	Design refer to EN55022 (CISPR22) Class A								
	EMS IMMUNITY	Design refer to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, light industry level, criteria A								
OTHERS	MTBF	234.3K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	215*115*50mm (L*W*H)								
	PACKING	1.07Kg; 12pcs/13.5Kg/0.92CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.									

■ Mechanical Specification

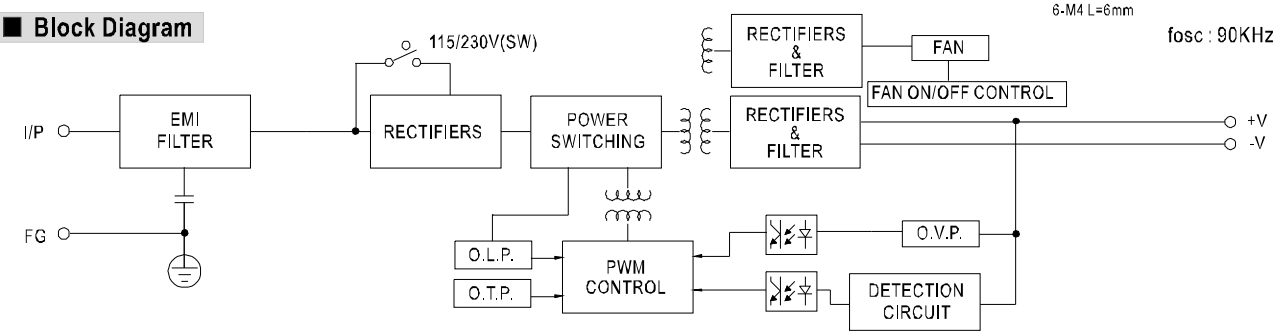
Case No. 912C Unit:mm



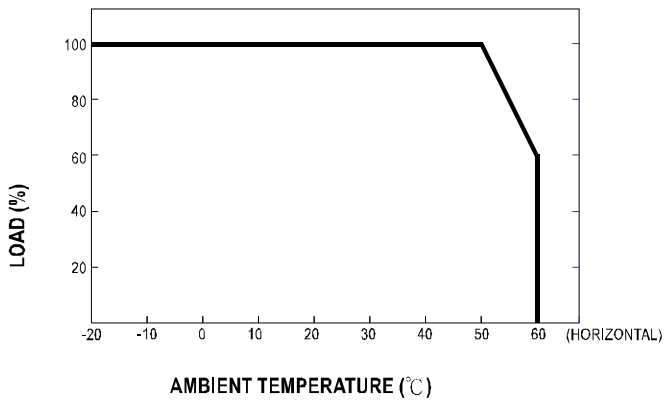
Terminal Pin No. assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

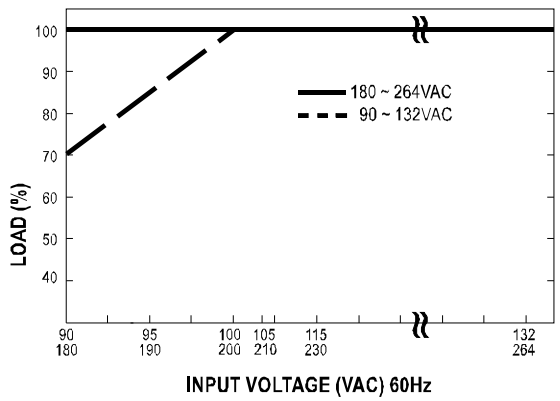
■ Block Diagram



■ Derating Curve



■ Static Characteristics



NIETZ 35W Triple Output Switching Power Supply NET-35 series

■ Features :

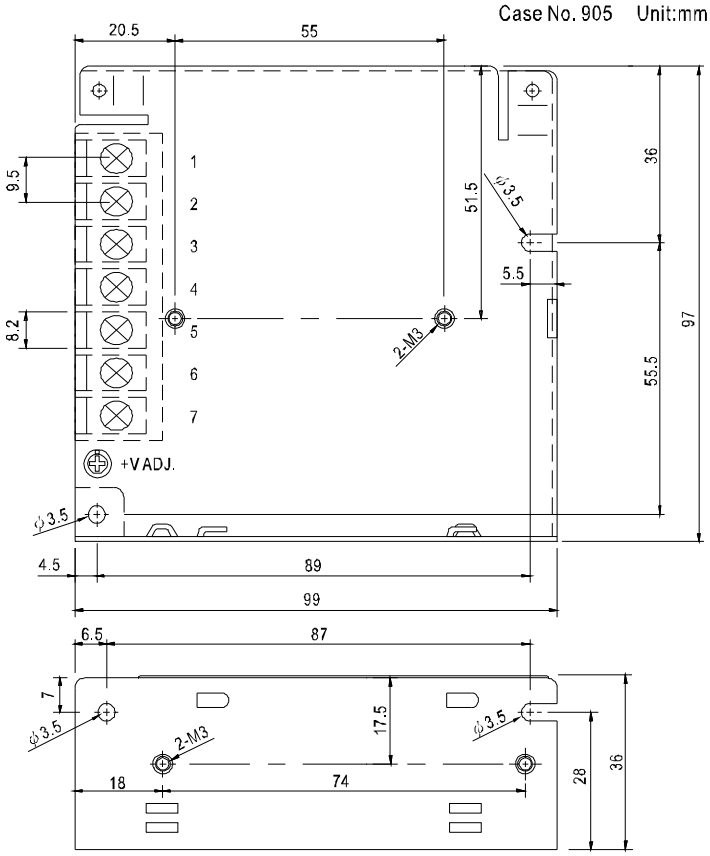
- Universal AC input / Full range
- Protections: Short circuit / Over load / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NET-35A			NET-35B			NET-35C			NET-35D		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	24V	12V
	RATED CURRENT	3A	1A	0.5A	3A	1A	0.5A	2.5A	1A	0.5A	2.5A	0.5A	1A
	CURRENT RANGE Note.6	0.5 ~ 4A	0.1 ~ 1.5A	0.1 ~ 0.5A	0.5 ~ 4A	0.1 ~ 1.5A	0.1 ~ 0.5A	0.5 ~ 3.5A	0.1 ~ 1.5A	0.1 ~ 0.5A	0.5 ~ 3.5A	0.1 ~ 1A	0.1 ~ 1A
	RATED POWER	29.5W			33W			35W			36.5W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p	80mVp-p	150mVp-p	150mVp-p	80mVp-p	200mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±6.0%	±2.0%	±6.0%	±6.0%	±2.0%	±8.0%	±8.0%	±2.0%	±8.0%	±8.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±3.0%	±1.5%	±3.0%	±3.0%	±1.5%	±3.0%	±3.0%	±1.5%	±3.0%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load											
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load											
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY (Typ.)	78%			79%			79%			79%		
	AC CURRENT (Typ.)	0.75A/115VAC 0.5A/230VAC											
	INRUSH CURRENT (Typ.)	COLD START 45A											
	LEAKAGE CURRENT	<2mA / 240VAC											
PROTECTION	OVERLOAD	110 ~ 150% rated output power											
		Protection type : Hiccup mode, recovers automatically after fault condition is removed											
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V											
		Protection type : Shut down o/p voltage, re-power on to recover											
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH											
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3											
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, EN55024, EN61000-6-1, light industry level, criteria A											
OTHERS	MTBF	386.2Khrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	99*97*36mm (L*W*H)											
	PACKING	0.36Kg; 45pcs/17.2Kg/0.93CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

Case No. 905 Unit:mm

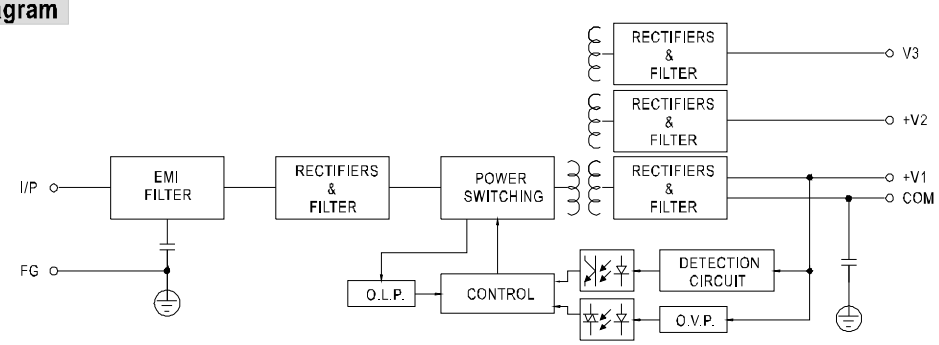


Terminal Pin No. Assignment

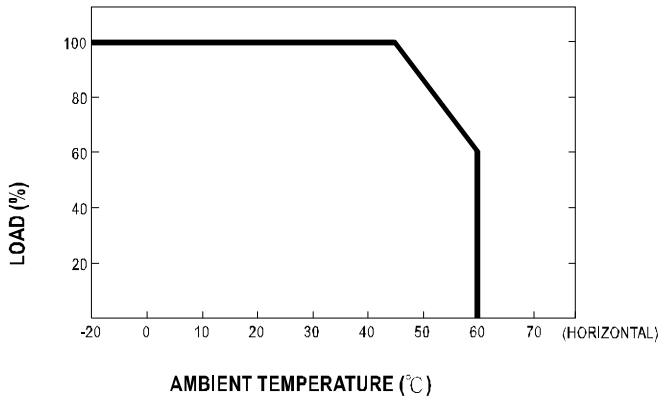
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT V3		

■ Block Diagram

fosc : 60KHz

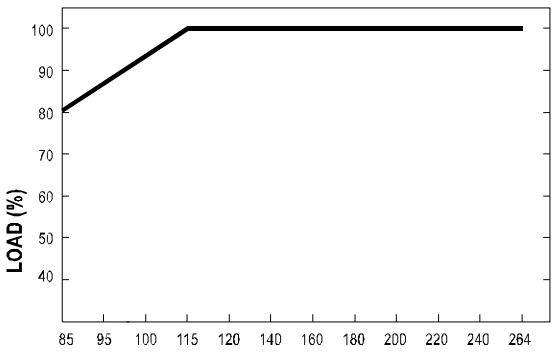


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 50W Triple Output Switching Power Supply NET-50 series

■ Features :

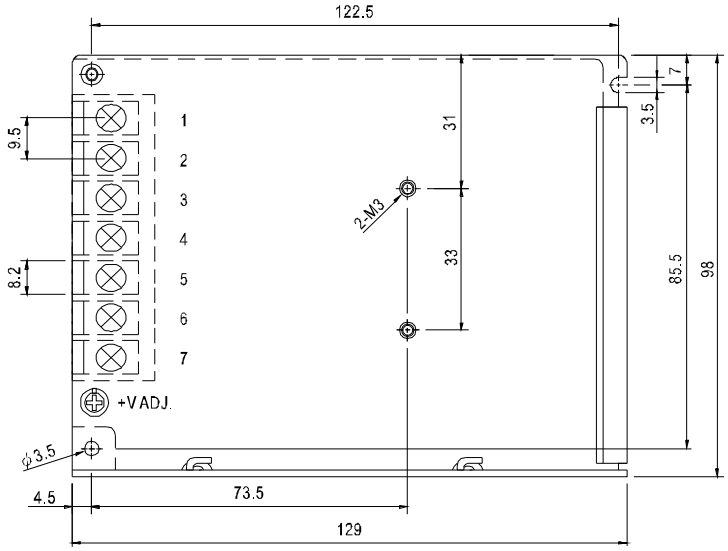
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

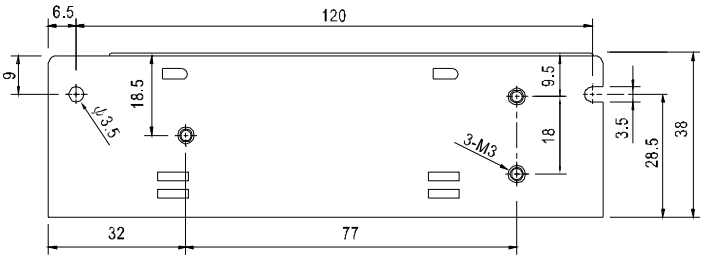
SPECIFICATION

MODEL		NET-50A			NET-50B			NET-50C			NET-50D		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	24V	12V
	RATED CURRENT	4A	2A	0.5A	4A	2A	0.5A	4A	1.5A	0.5A	3A	1A	1A
	CURRENT RANGE Note.6	0.6 ~ 5A	0.2 ~ 2.5A	0.1 ~ 0.7A	0.6 ~ 5A	0.2 ~ 2.5A	0.1 ~ 0.7A	0.6 ~ 5A	0.1 ~ 2A	0.1 ~ 0.7A	0.6 ~ 5A	0.1 ~ 1.5A	0.1 ~ 1.5A
	RATED POWER	46.5W			50W			50W			51W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p	80mVp-p	150mVp-p	150mVp-p	80mVp-p	200mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±5.0%	±2.0%	±6.0%	±5.0%	±2.0%	±8.0%	±5.0%	±2.0%	±8.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load											
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load											
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY (Typ.)	76%			78%			78%			80%		
	AC CURRENT (Typ.)	1.1A/115VAC 0.65A/230VAC											
	INRUSH CURRENT (Typ.)	COLD START 45A											
	LEAKAGE CURRENT	<2mA / 240VAC											
PROTECTION	OVERLOAD	110 ~ 150% rated output power											
		Protection type : Hiccup mode, recovers automatically after fault condition is removed											
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V											
		Protection type : Shut down o/p voltage, re-power on to recover											
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH											
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3											
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A											
OTHERS	MTBF	348.4K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	129*98*38mm (L*W*H)											
	PACKING	0.44Kg; 45pcs/21Kg/1.24CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

Case No. 903 Unit:mm



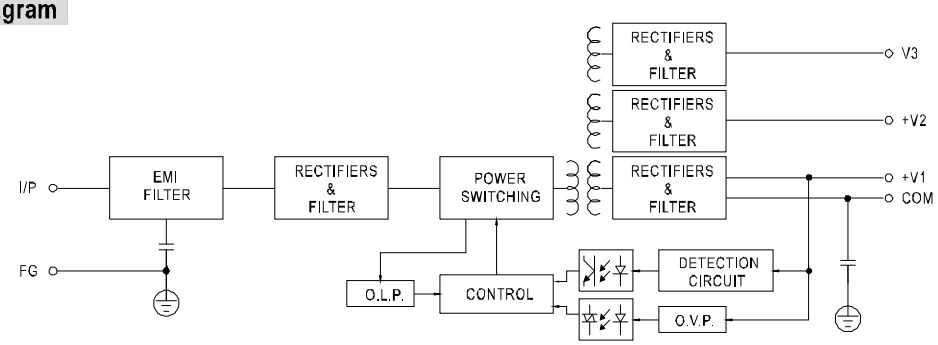


Terminal Pin No. Assignment

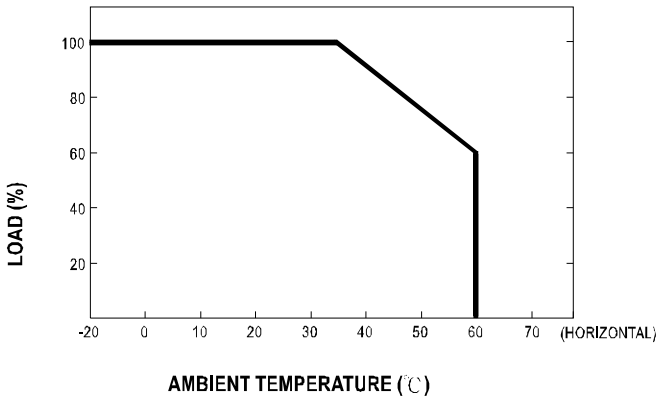
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT V3		

■ Block Diagram

fosc : 60KHz

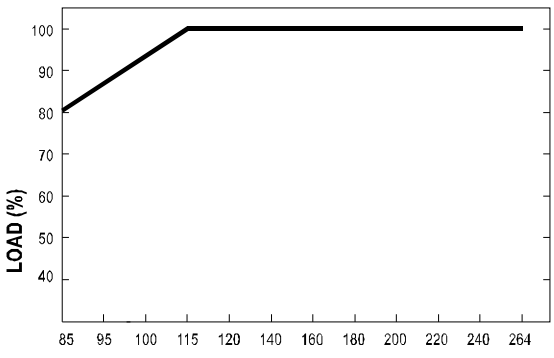


■ Derating Curve



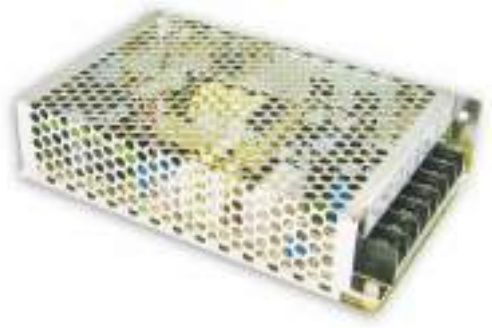
AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 75W Triple Output Switching Power Supply — NET-75 series



■ Features :

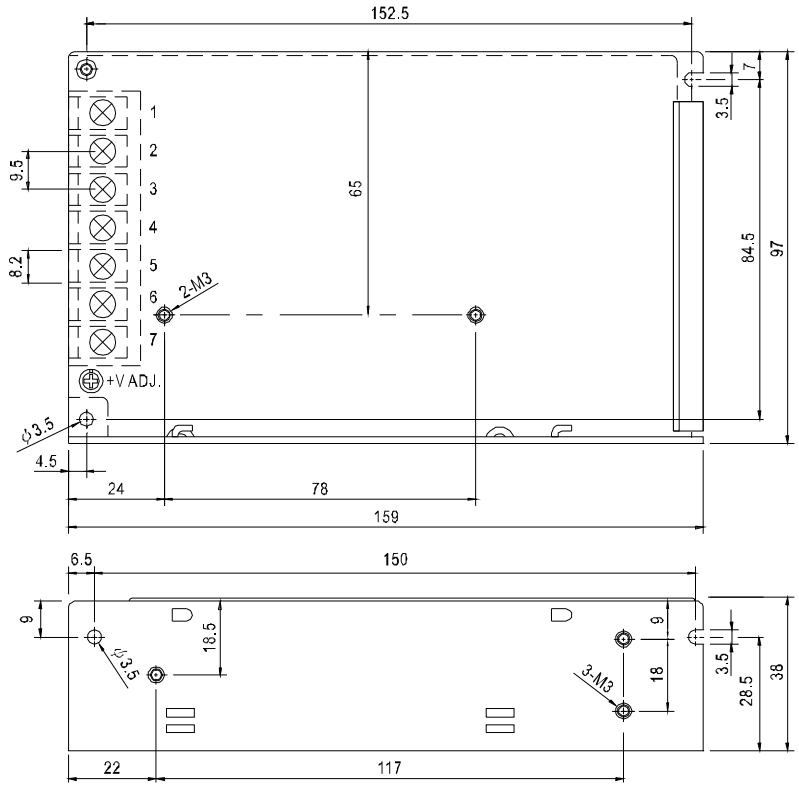
- Universal AC input / Full range
- Protections: Short circuit / Over load / Over voltage
- Cooling by free air convection
- 100% full load burn-in test

SPECIFICATION

MODEL		NET-75A			NET-75B			NET-75C			NET-75D		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	24V	12V
	RATED CURRENT	6A	3A	0.5A	5A	2.8A	0.5A	6A	2.3A	0.5A	5A	1.5A	1A
	CURRENT RANGE Note.6	0.6 ~ 7A	0.2 ~ 3.5A	0.1 ~ 0.7A	0.6 ~ 7A	0.2 ~ 3.5A	0.1 ~ 0.7A	0.6 ~ 7A	0.1 ~ 3.5A	0.1 ~ 0.7A	0.6 ~ 6A	0.1 ~ 2A	0.1 ~ 1.5A
	RATED POWER	68.5W			64.6W			72W			73W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p	80mVp-p	150mVp-p	150mVp-p	80mVp-p	200mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V			CH1: 4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±5.0%	±2.0%	±6.0%	±5.0%	±2.0%	±8.0%	±5.0%	±2.0%	±8.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load											
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load											
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY(Typ.)	77%			78%			78%			80%		
	AC CURRENT (Typ.)	1.5A/115VAC 0.9A/230VAC											
	INRUSH CURRENT (Typ.)	COLD START 45A											
	LEAKAGE CURRENT	<2mA / 240VAC											
PROTECTION	OVERLOAD	110 ~ 150% rated output power											
		Protection type : Hiccup mode, recovers automatically after fault condition is removed											
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V											
		Protection type : Shut down o/p voltage, re-power on to recover											
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH											
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3											
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-1, light industry level, criteria A											
OTHERS	MTBF	361.6K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	159*97*38mm (L*W*H)											
	PACKING	0.52Kg; 30pcs/16.6Kg/0.97CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

Case No. 901 Unit:mm

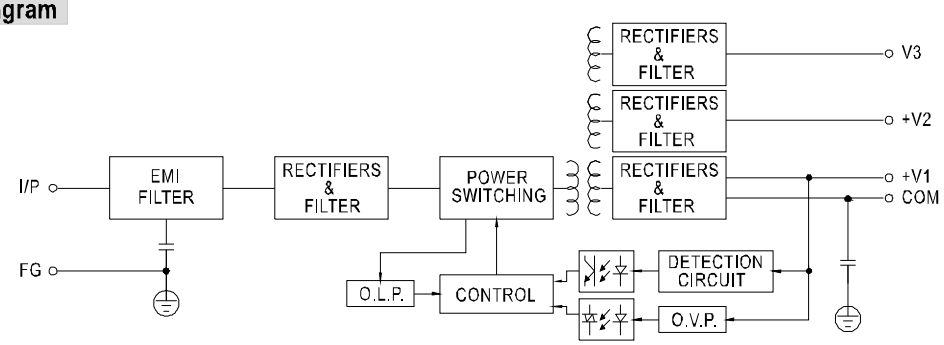


Terminal Pin No. Assignment

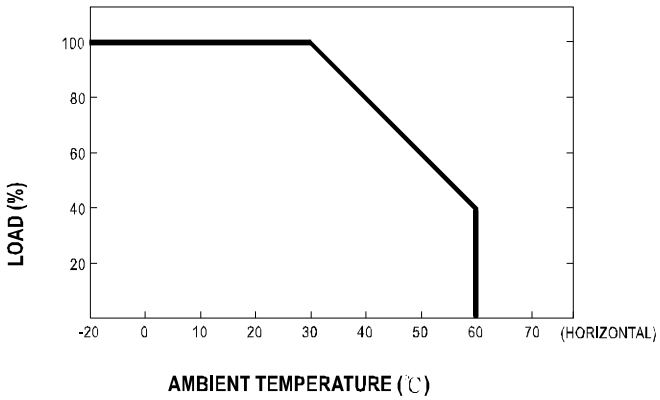
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT V3		

■ Block Diagram

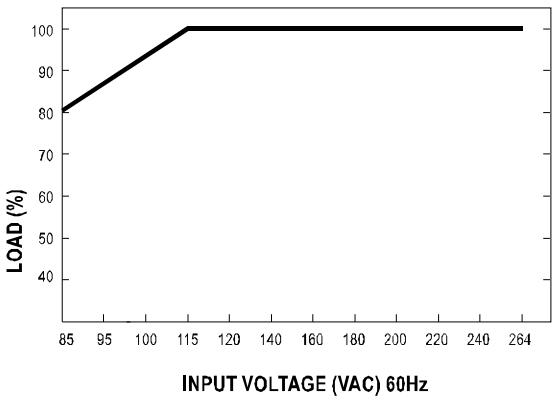
fosc : 60KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 30W Single Output LED Power Supply **PLC-30 series**

■ Features :

- Universal AC input / Full range
- Adjustable output voltage and current level
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Fully isolated plastic case with terminal block style of I/O
- Built-in active PFC function, comply with EN61000-3-2 class C (Pin≧25W)
- Class Ⅱ power unit, no FG
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting

SPECIFICATION

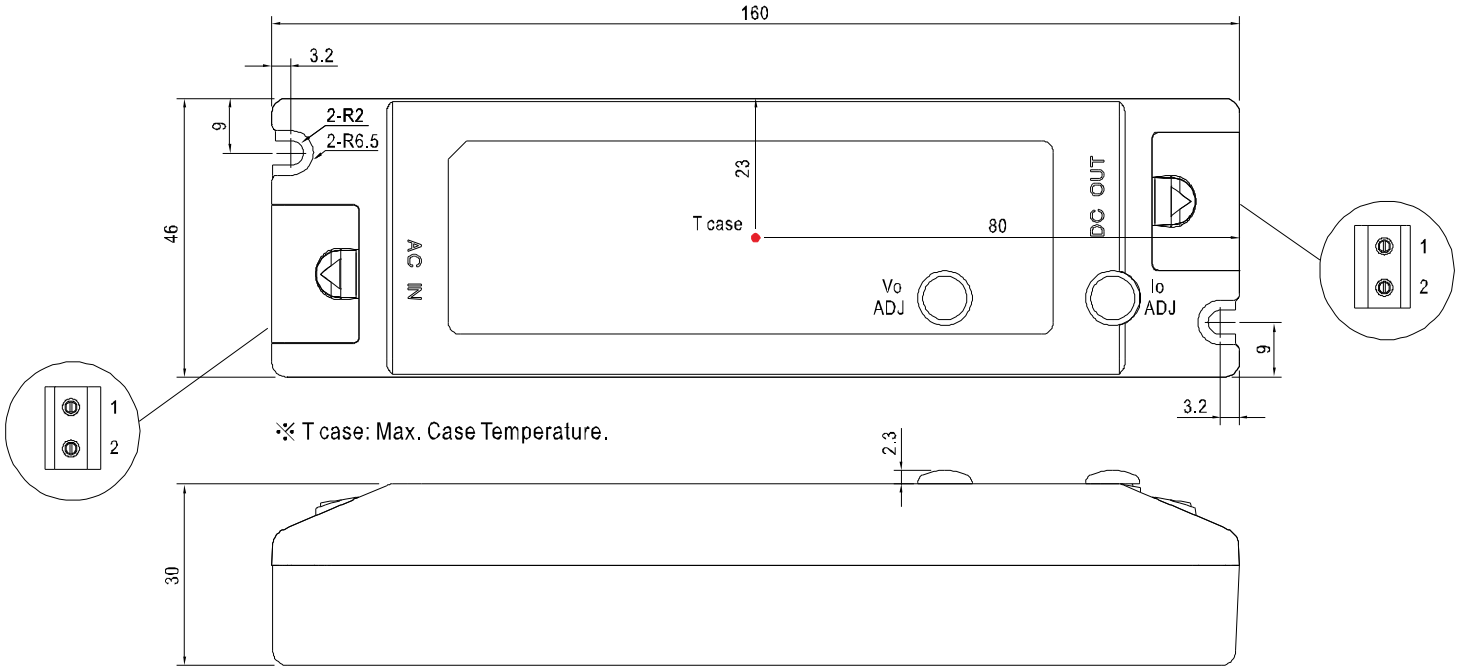
MODEL		PLC-30-9	PLC-30-12	PLC-30-15	PLC-30-20	PLC-30-24	PLC-30-27	PLC-30-36	PLC-30-48
OUTPUT	DC VOLTAGE	9V	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.6	6.3 ~ 9V	8.4 ~ 12V	10.5 ~ 15V	14 ~ 20V	16.8 ~ 24V	18.9 ~ 27V	25.2 ~ 36V	33.6 ~ 48V
	RATED CURRENT	3.3A	2.5A	2A	1.5A	1.25A	1.12A	0.84A	0.63A
	CURRENT RANGE	0 ~ 3.3A	0 ~ 2.5A	0 ~ 2A	0 ~ 1.5A	0 ~ 1.25A	0 ~ 1.12A	0 ~ 0.84A	0 ~ 0.63A
	RATED POWER	29.7W	30W	30W	30W	30W	30.24W	30.24W	30.24W
	RIPPLE & NOISE (max.) Note.2	2.6Vp-p	2Vp-p	2.6Vp-p	2.6Vp-p	2.4Vp-p	2.3Vp-p	3.6Vp-p	3.7Vp-p
	VOLTAGE ADJ. RANGE Note.5	8.55 ~ 9.9V	11.4 ~ 13.2V	14.5 ~ 16.5V	19 ~ 22V	22.8 ~ 26.4V	25.65 ~ 29.7V	34.2 ~ 39.6V	45.6 ~ 52.8V
	CURRENT ADJ. RANGE Note.5	2.475 ~ 3.399A	1.875 ~ 2.575A	1.5 ~ 2.06A	1.125 ~ 1.545A	0.938 ~ 1.288A	0.84 ~ 1.1536A	0.63 ~ 0.865A	0.473 ~ 0.649A
	VOLTAGE TOLERANCE Note.3	±10%							
	LINE REGULATION	±3.0%							
	LOAD REGULATION	±5.0%							
	SETUP TIME	1500ms / 230VAC 3000ms / 115VAC at full load							
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.95/115VAC, PF>0.9/230VAC at full load (Please refer to "Power Factor Characteristic" curve)							
	EFFICIENCY (Typ.)	80%	82.5%	83.5%	84%	84%	84.5%	85%	85.5%
	AC CURRENT (Typ.)	0.4A/115VAC 0.2A/230VAC							
	INRUSH CURRENT (max.)	40A/230VAC							
	LEAKAGE CURRENT	<0.5mA / 240VAC							
PROTECTION	OVER CURRENT	100 ~ 110%							
		Protection type : Constant current limiting, recovers automatically after fault condition is removed							
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.							
	OVER VOLTAGE	10 ~ 14V	14 ~ 16V	17 ~ 22V	23 ~ 26V	27 ~ 34V	31 ~ 35V	40 ~ 50V	53 ~ 63V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	95℃ ±10℃ (TSW1)							
		Protection type : Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-30 ~ +50℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.06%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	UL1310 Class 2, TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC							
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH							
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (Pin≧25W), Class D (>70% load) ; EN61000-3-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547, light industry level, criteria A							
OTHERS	MTBF	625.5Khrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	160*46*30mm (L*W*H)							
	PACKING	0.2Kg; 70pcs/15Kg/0.96CUFT							

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Output voltage can be adjusted through the SVR1 on the PCB; limit of output constant current level can be adjusted through the SVR2 on the PCB.
6. Constant current operation region is within 70% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
8. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

■ Mechanical Specification

Case No. 990A Unit:mm



Terminal Pin No. Assignment (TB1) :
SWITCHLAB MB310-75002

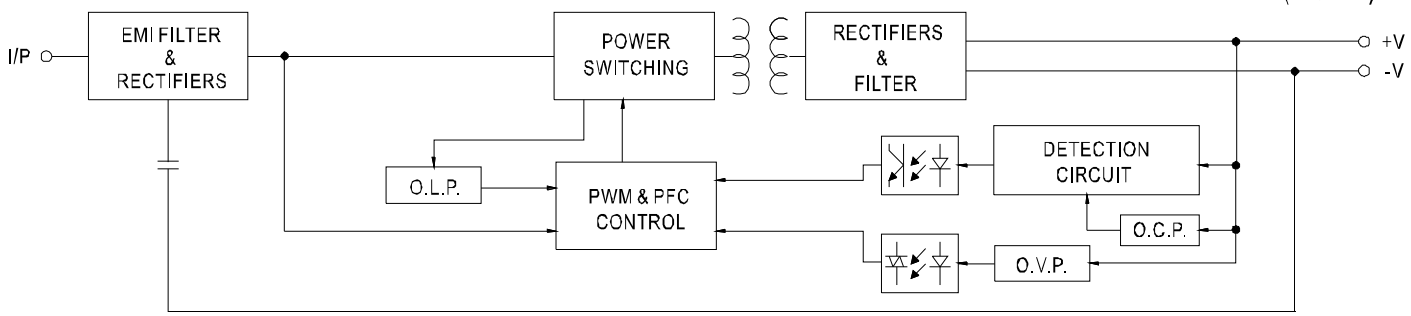
Pin No.	Assignment
1	AC/N
2	AC/L

Terminal Pin No. Assignment (TB2) :
SWITCHLAB MB310-75002

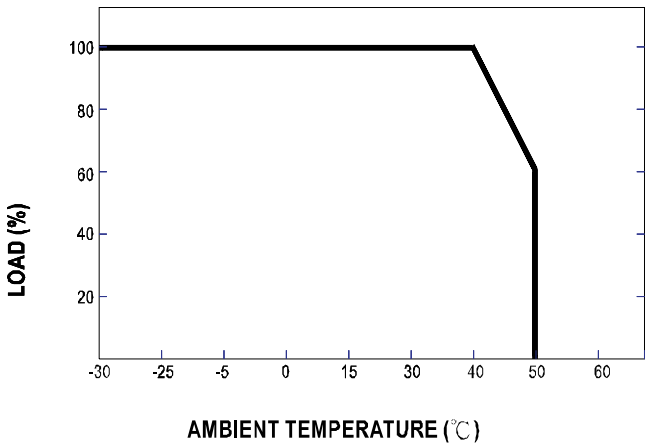
Pin No.	Assignment
1	+V
2	-V

■ Block Diagram

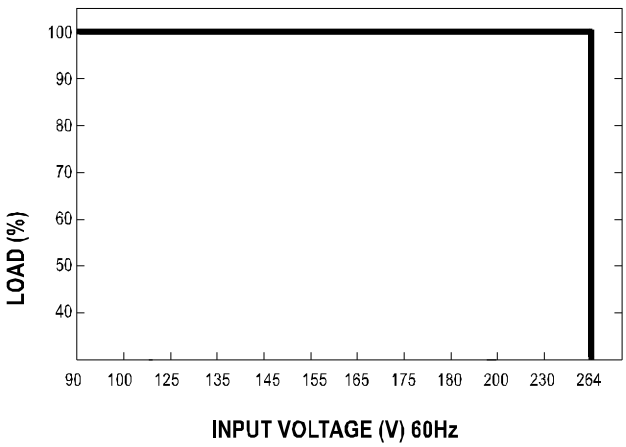
fosc : 39KHz(115VAC)
53KHz(230VAC)



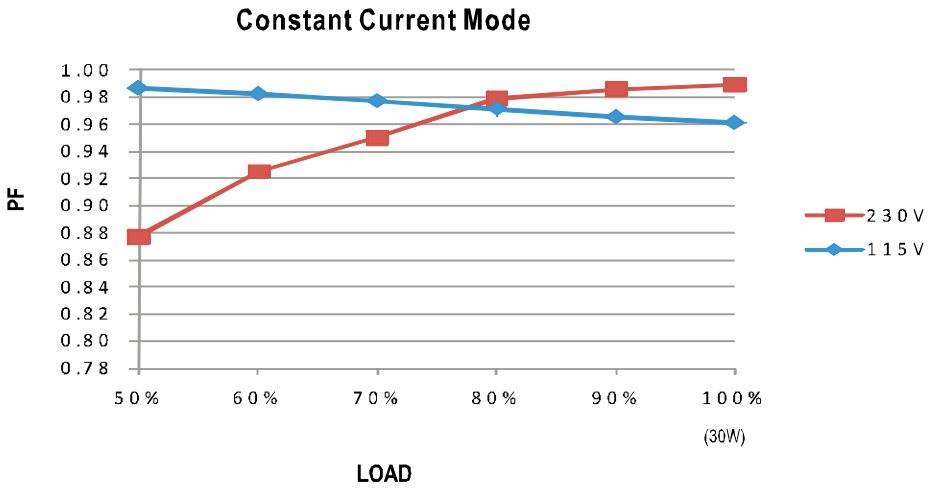
■ Derating Curve



■ Static Characteristics

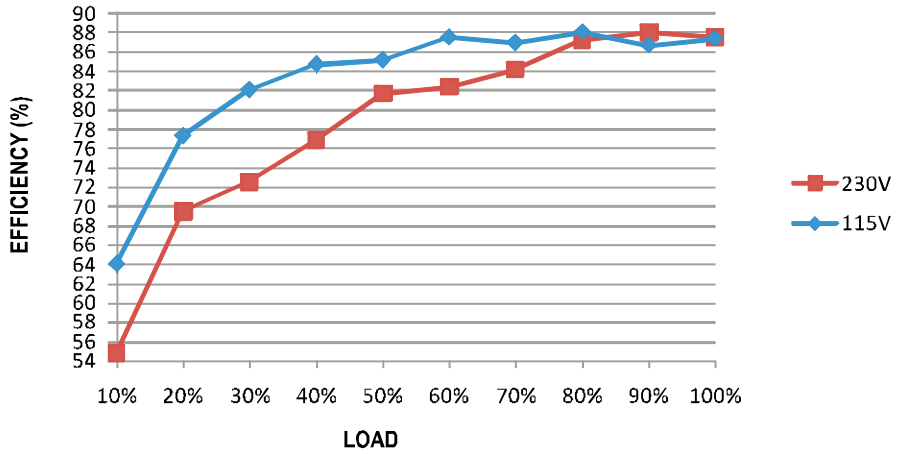


■ Power Factor Characteristic



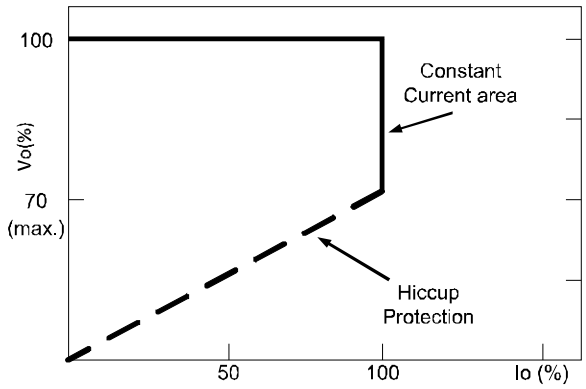
■ EFFICIENCY vs LOAD (48V Model)

PLC-30 series possess superior working efficiency that up to 85.5% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve

NIETZ 45W Single Output LED Power Supply PLC-45 series

■ Features :

- Universal AC input / Full range
- Adjustable output voltage and current level
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Fully isolated plastic case with terminal block style of I/O
- Built-in active PFC function, comply with EN61000-3-2 class C (≥75% load)
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting

SPECIFICATION

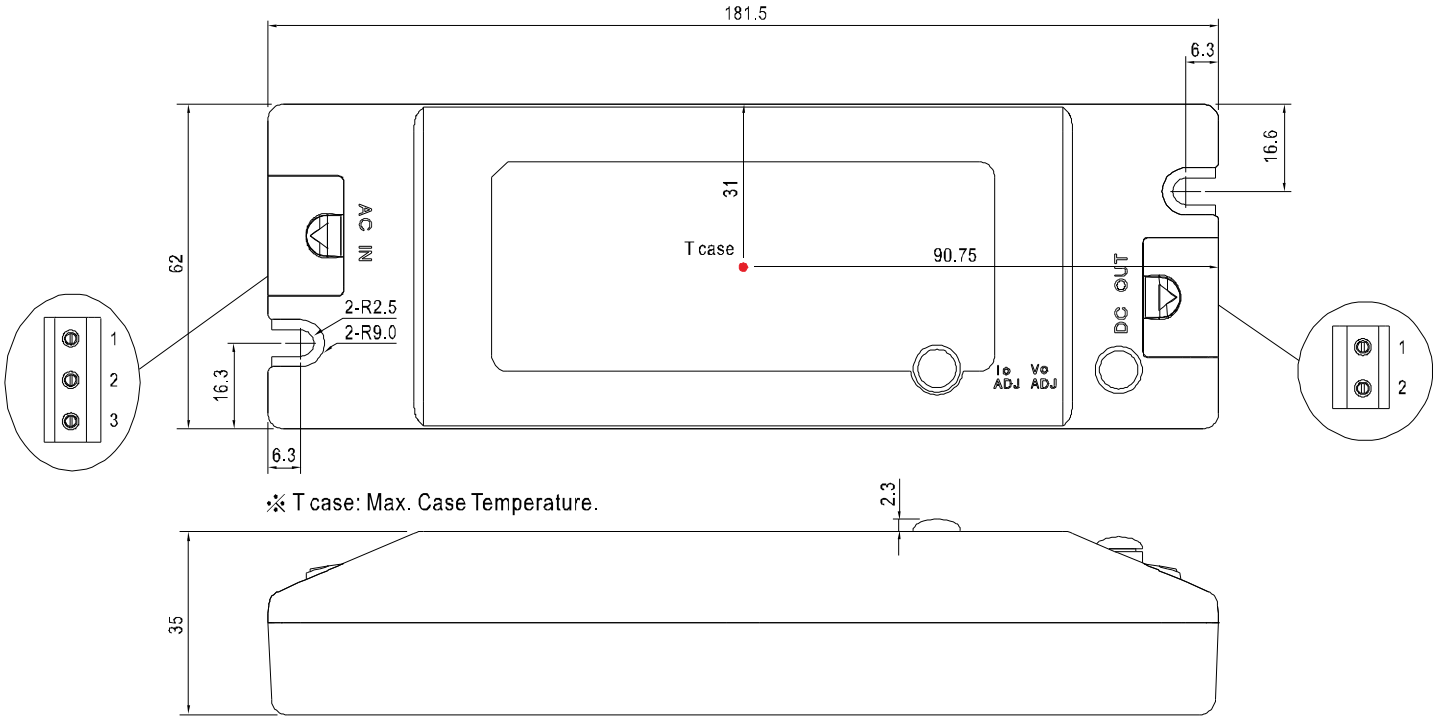
MODEL		PLC-45-12	PLC-45-15	PLC-45-20	PLC-45-24	PLC-45-27	PLC-45-36	PLC-45-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.6	9 ~ 12V	11.25 ~15V	15 ~ 20V	18 ~24V	20.25 ~27V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	3.8A	3A	2.3A	1.9A	1.7A	1.25A	0.95A
	CURRENT RANGE	0 ~ 3.8A	0 ~ 3A	0 ~ 2.3A	0 ~ 1.9A	0 ~ 1.7A	0 ~ 1.25A	0 ~ 0.95A
	RATED POWER	45.6W	45W	46W	45.6W	45.9W	45W	45.6W
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.7Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p
	VOLTAGE ADJ. RANGE Note.5	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V
	CURRENT ADJ. RANGE Note.5	2.85 ~ 3.914A	2.25 ~ 3.1A	1.725 ~ 2.37A	1.425 ~1.957A	1.275 ~ 1.75A	0.938 ~ 1.288A	0.713 ~ 0.979A
	VOLTAGE TOLERANCE Note.3	±10%						
	LINE REGULATION	±3.0%						
	LOAD REGULATION	±5.0%						
	SETUP TIME	1500ms / 230VAC 3000ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.92/115VAC, PF>0.9/230VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	83.5%	85%	86.5%	86.5%	86.5%	87.5%	87.5%
	AC CURRENT (Typ.)	0.55A/115VAC 0.25A/230VAC						
	INRUSH CURRENT (max.)	40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 110%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.						
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	22.8 ~ 25V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER TEMPERATURE	95℃ ±10℃ (TSW1) detect on heatsink of power transistor						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-30 ~ +50℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL1310 Class 2, TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024,EN61547, light industry level, criteria A						
OTHERS	MTBF	515Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	181.5*62*35mm (L*W*H)						
	PACKING	0.41Kg; 30pcs/13.3Kg/0.67CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB.
6. Constant current operation region is within 75% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
8. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

■ Mechanical Specification

Case No.991A Unit:mm



※ T case: Max. Case Temperature.

Terminal Pin No. Assignment (TB1) :
SWITCHLAB MB310-75003

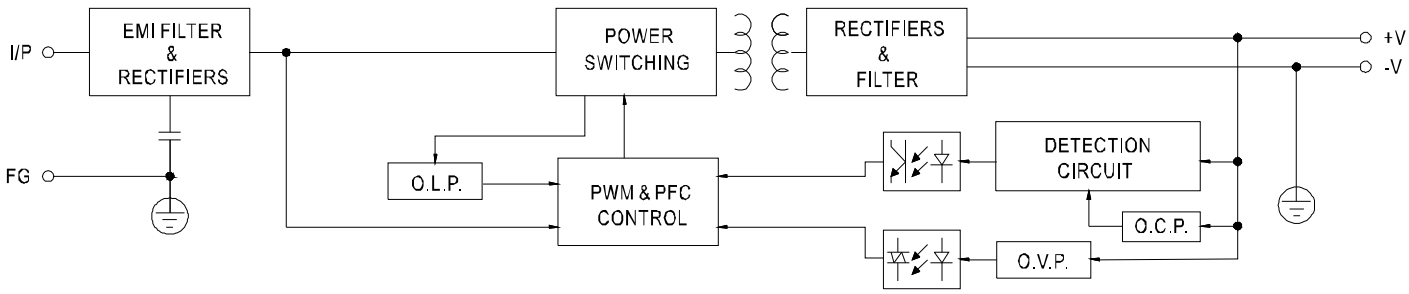
Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

Terminal Pin No. Assignment (TB2) :
SWITCHLAB MB310-75002

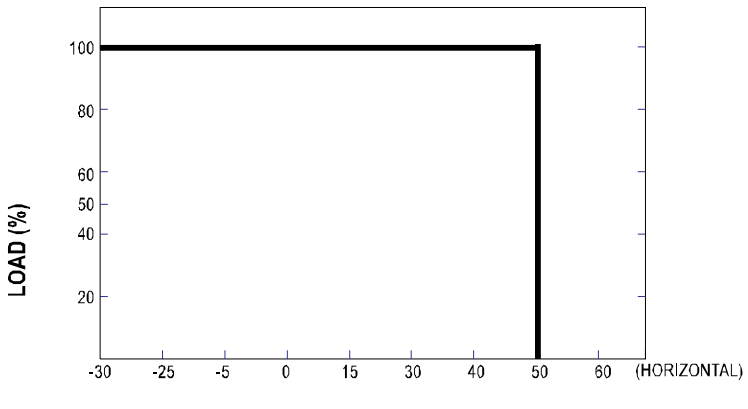
Pin No.	Assignment
1	+V
2	-V

■ Block Diagram

fosc : 90KHz(115VAC)
120KHz(230VAC)

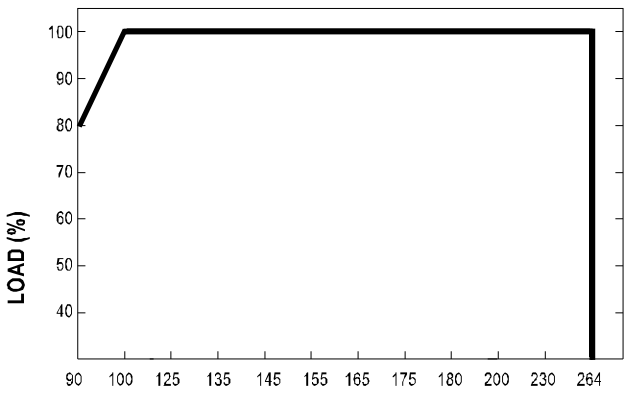


■ Derating Curve



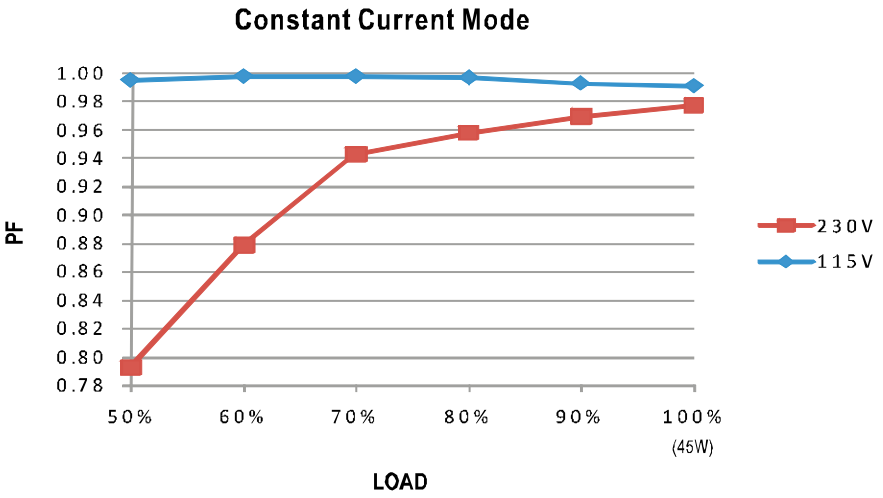
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



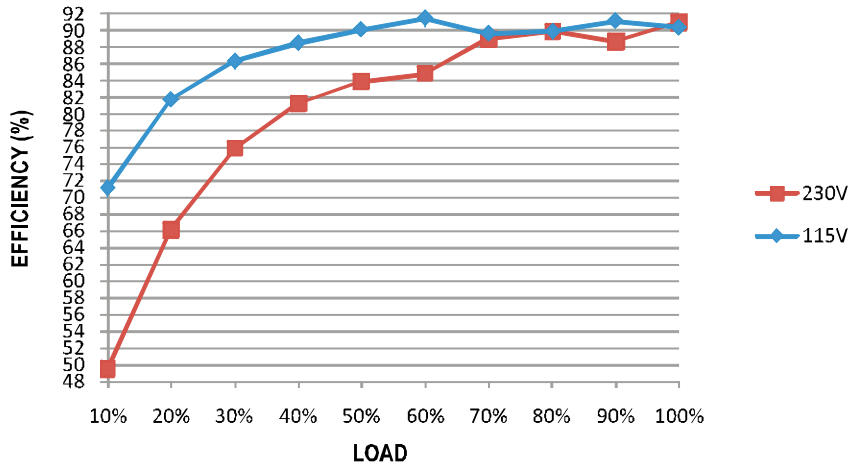
INPUT VOLTAGE (V) 60Hz

■ Power Factor Characteristic



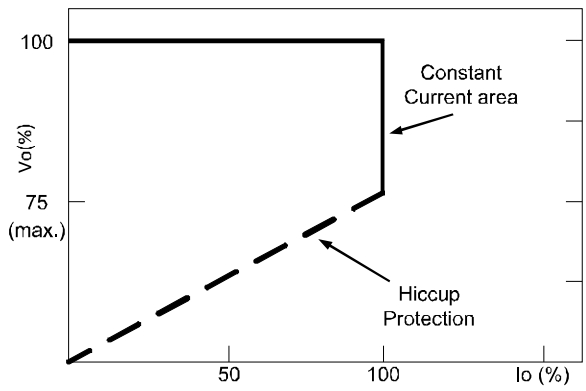
■ EFFICIENCY vs LOAD (48V Model)

PLC-45 series possess superior working efficiency that up to 87.5% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve

NIETZ 60W Single Output LED Power Supply **PLC-60 series**

■ Features :

- Universal AC input / Full range
- High efficiency 89%
- Adjustable output voltage and current level
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Fully isolated plastic case with terminal block style of I/O
- Built-in active PFC function, comply with EN61000-3-2 class C (≧75% load)
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting

SPECIFICATION

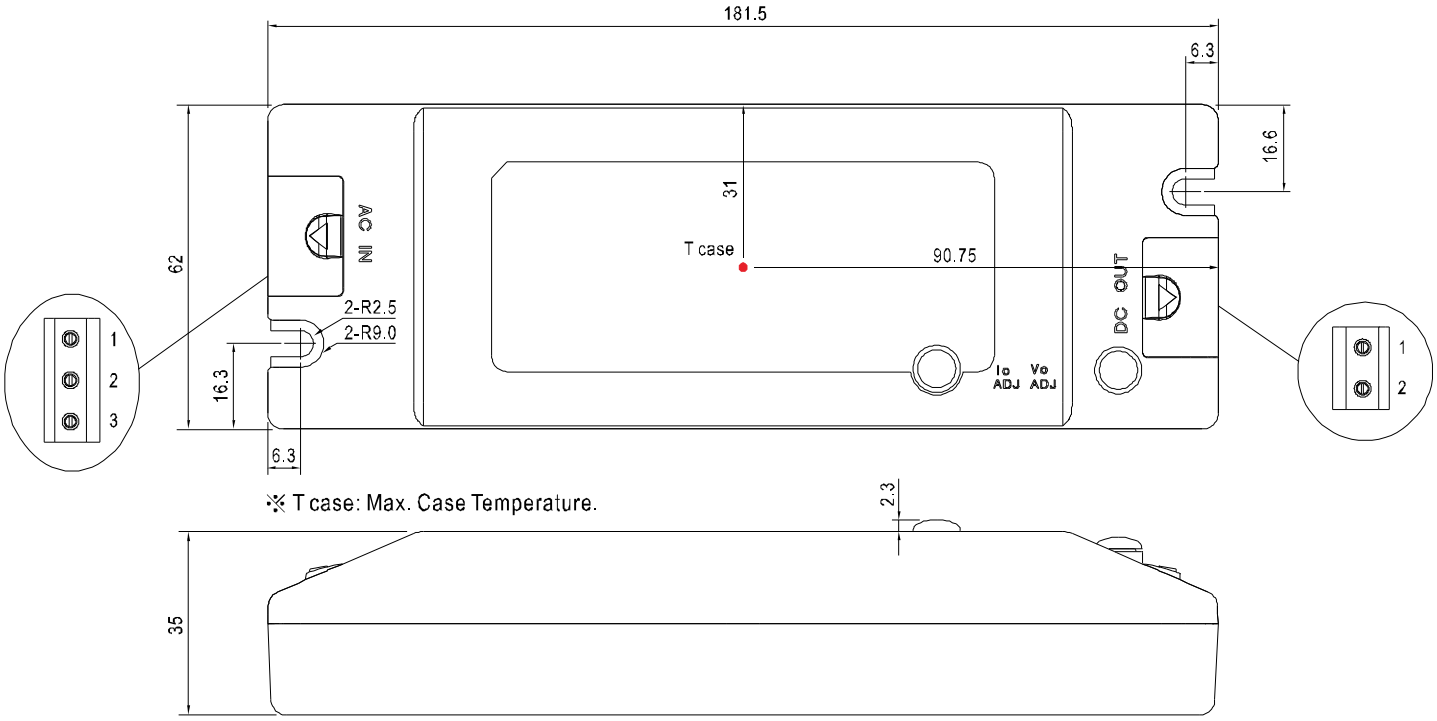
MODEL		PLC-60-12	PLC-60-15	PLC-60-20	PLC-60-24	PLC-60-27	PLC-60-36	PLC-60-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.6	8.4 ~ 12V	10.5 ~15V	14 ~ 20V	16.8 ~24V	18.9 ~27V	25.2 ~ 36V	33.6 ~ 48V
	RATED CURRENT	5A	4A	3A	2.5A	2.3A	1.7A	1.3A
	CURRENT RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A
	RATED POWER	60W	60W	60W	60W	62.1W	61W	62.5W
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.4Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p
	VOLTAGE ADJ. RANGE Note.5	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V
	CURRENT ADJ. RANGE Note.5	3.75 ~ 5.15A	3 ~ 4.12A	2.25 ~ 3.09A	1.875 ~ 2.575A	1.725 ~ 2.369A	1.275 ~ 1.751A	0.975 ~ 1.339A
	VOLTAGE TOLERANCE Note.3	±10%						
	LINE REGULATION	±3.0%						
	LOAD REGULATION	±5.0%						
	SETUP TIME	1500ms / 230VAC 3000ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.9/230VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	85%	86%	87.5%	87%	88%	89%	89%
	AC CURRENT (Typ.)	0.8A/115VAC 0.4A/230VAC						
	INRUSH CURRENT (max.)	40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT	95 ~ 110%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.						
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	23 ~ 26V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER TEMPERATURE	95℃ ±10℃ (TSW1) detect on heatsink of power transistor						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-30 ~ +50℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS	UL1310 Class 2, TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024,EN61547, light industry level, criteria A						
OTHERS	MTBF	515Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	181.5*62*35mm (L*W*H)						
	PACKING	0.41Kg; 30pcs/13.3Kg/0.67CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB.
6. Constant current operation region is within 70% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
8. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

Mechanical Specification

Case No.991A Unit:mm



Terminal Pin No. Assignment (TB1) :
SWITCHLAB MB310-75003

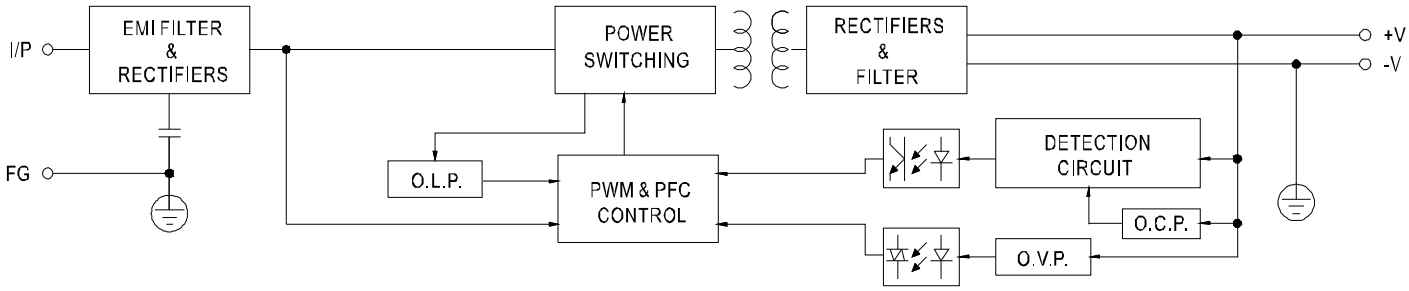
Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

Terminal Pin No. Assignment (TB2) :
SWITCHLAB MB310-75002

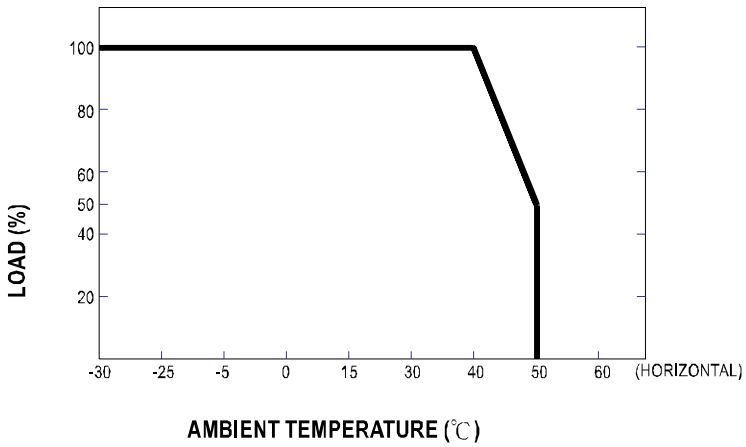
Pin No.	Assignment
1	+V
2	-V

Block Diagram

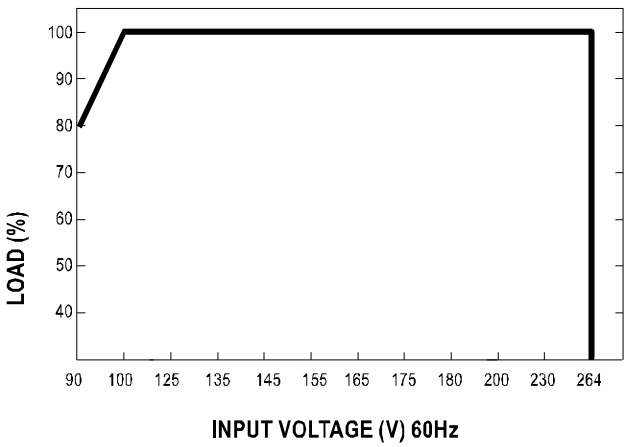
fosc : 90KHz(115VAC)
120KHz(230VAC)



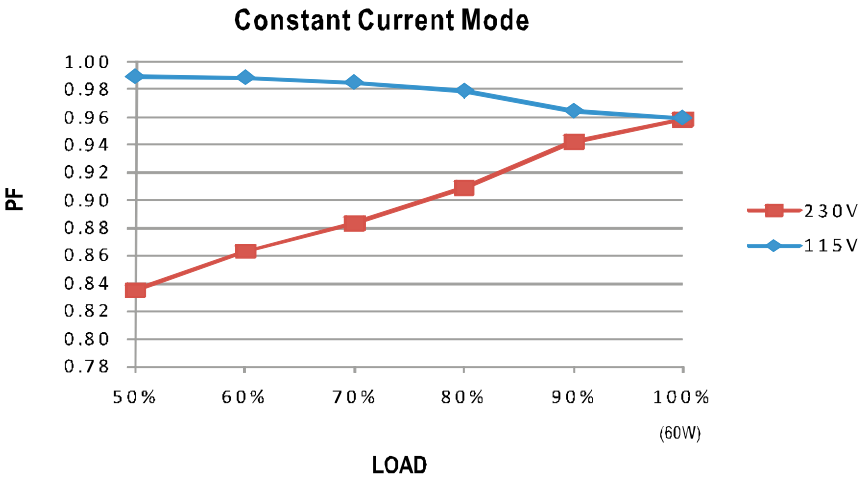
Derating Curve



Static Characteristics

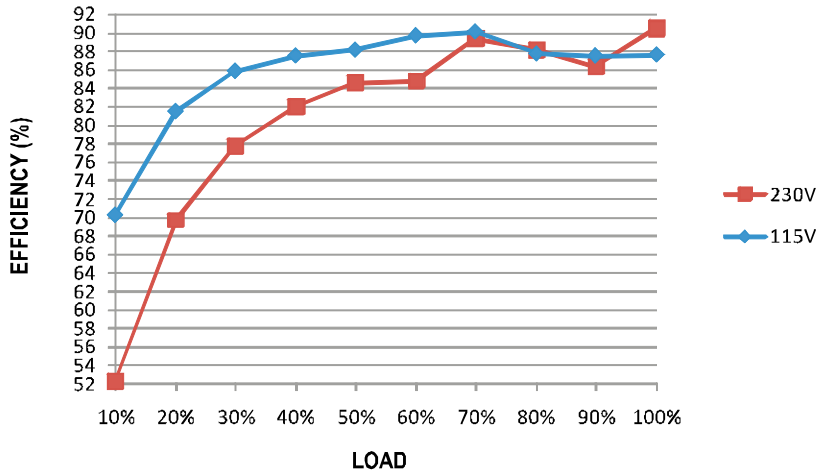


■ Power Factor Characteristic



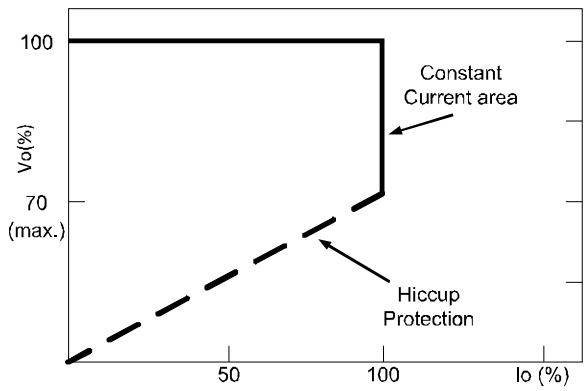
■ EFFICIENCY vs LOAD (48V Model)

PLC-60 series possess superior working efficiency that up to 89% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve

NIETZ 100W Single Output Switching Power Supply **PLC-100 series**

■ Features :

- Universal AC input / Full range
- High efficiency 90%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting

SPECIFICATION

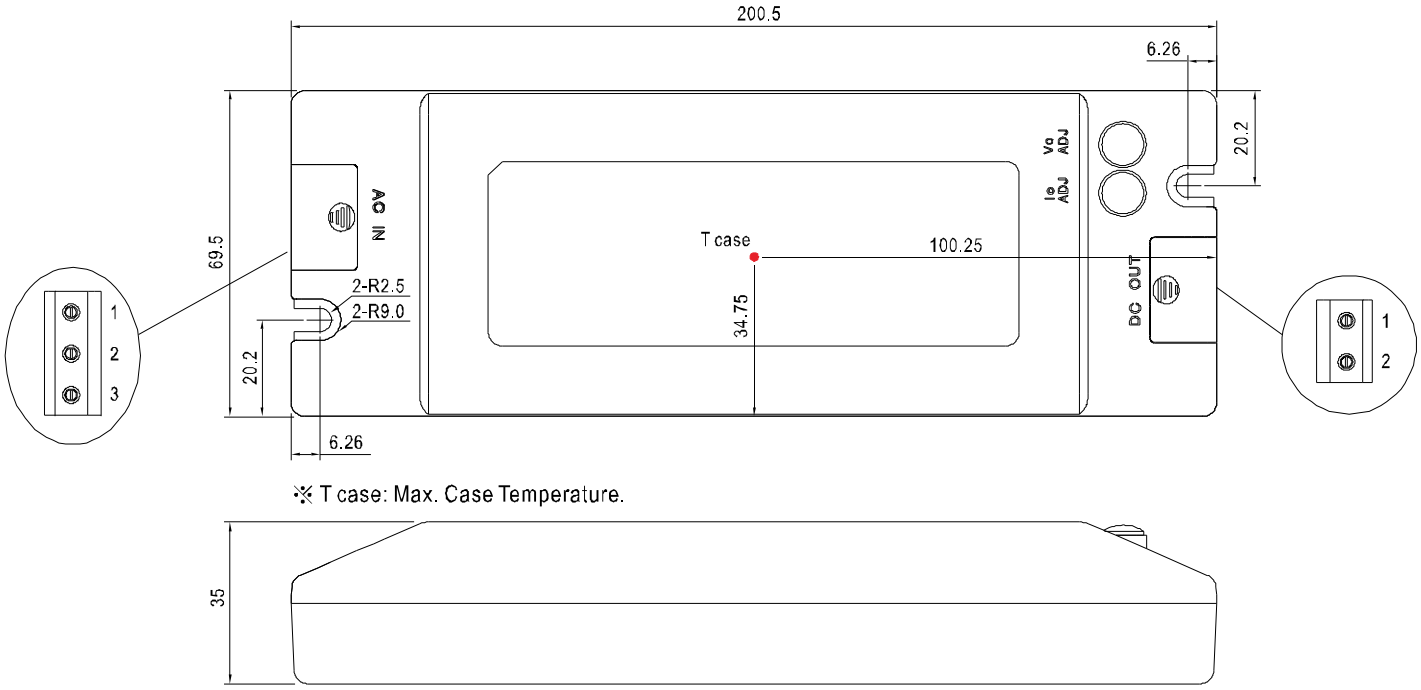
MODEL		PLC-100-12	PLC-100-15	PLC-100-20	PLC-100-24	PLC-100-27	PLC-100-36	PLC-100-48
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V
	CONSTANT CURRENT REGION Note.4	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V
	RATED CURRENT Note.6	5A	5A	4.8A	4A	3.55A	2.65A	2A
	CURRENT RANGE Note.6	0 ~ 5A	0 ~ 5A	0 ~ 4.8A	0 ~ 4A	0 ~ 3.55A	0 ~ 2.65A	0 ~ 2A
	RATED POWER Note.6	60W	75W	96W	96W	95.85W	95.4W	96W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE(Vo ADJ)	10.2 ~ 12V	12.8 ~ 15V	17 ~ 20V	20.4 ~ 24V	23 ~ 27V	30.6 ~ 36V	40.8 ~ 48V
	CURRENT ADJ. RANGE(Io ADJ)	3.75 ~ 5A	3.75 ~ 5A	3.6 ~ 4.8A	3 ~ 4A	2.6 ~ 3.55A	2 ~ 2.65A	1.5 ~ 2A
	VOLTAGE TOLERANCE Note.3	±3.0%	±3.0%	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%
	LINE REGULATION	±1.0%						
	LOAD REGULATION	±2.0%						
	SETUP, RISE TIME	1200ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load						
	HOLD UP TIME (Typ.)	60ms/230VAC 30ms/115VAC at full load						
INPUT	VOLTAGE RANGE Note.5	90 ~ 264VAC 127 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.95/115VAC, PF>0.95/230VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	EFFICIENCY (Typ.)	84.5%	86.5%	90%	90%	90%	90%	89%
	AC CURRENT (Typ.)	12V:0.8A/115VAC 0.4A/230VAC		15V:0.9A/115VAC 0.45A/230VAC		20V ~ 48V:1.1A/115VAC 0.55A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 40A/230VAC						
	LEAKAGE CURRENT	<0.75mA / 240VAC						
PROTECTION	OVER CURRENT (Typ.) Note.4	95 ~ 102%						
		Protection type : Constant current limiting, recovers automatically after fault condition is removed						
	OVER VOLTAGE	13 ~ 16V	16.5 ~ 20V	22 ~ 27V	27 ~ 34V	30 ~ 36V	39 ~ 48V	52 ~ 64V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE	90℃ ±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +50℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS Note.7	UL1310 Class 2, TUV EN60950-1, EN61347-1, EN61347-2-13, CAN/CSA C22.2 No. 223-M91(except for 48V) ; J61347-1, J61347-2-13 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2,-3, Class C (≧70% load) ; EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level, (surge 4KV), criteria A						
OTHERS	MTBF	297.9Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	200.5*69.5*35mm (L*W*H)						
	PACKING	0.52Kg; 25pcs/14Kg/0.65CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Constant current operation region is within 75% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.
5. Derating may be needed under low input voltage. Please check the static characteristics for more details.
6. This is the maximum possible output current and power. Over load protection may be activated slightly below this level to comply with the requirement of UL1310 class 2.
7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

■ Mechanical Specification

Case No.981A Unit:mm



※ T case: Max. Case Temperature.

Terminal Pin No. Assignment (TB1) :
SWITCHLAB MB310-75003

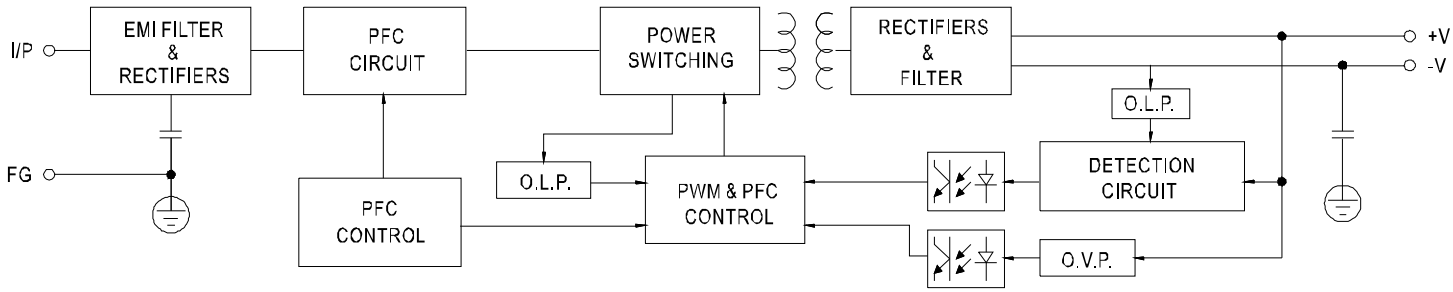
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2) :
SWITCHLAB MB310-75002

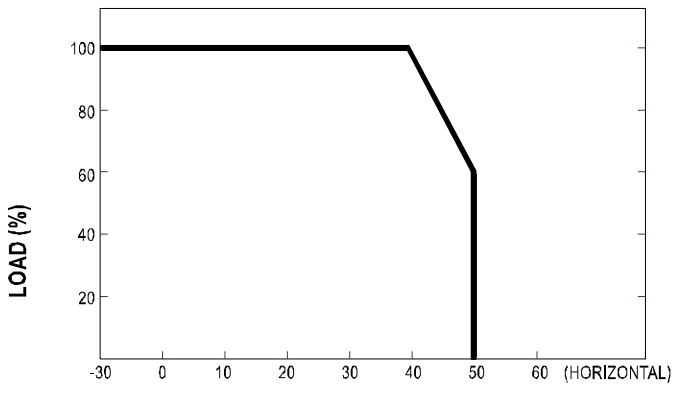
Pin No.	Assignment
1	+V
2	-V

■ Block Diagram

Fosc : 100KHz

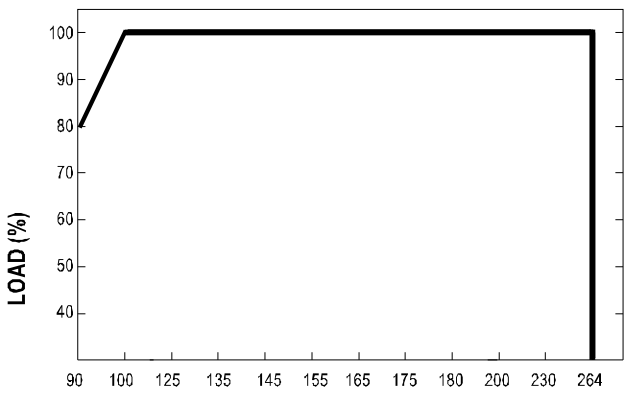


■ Derating Curve



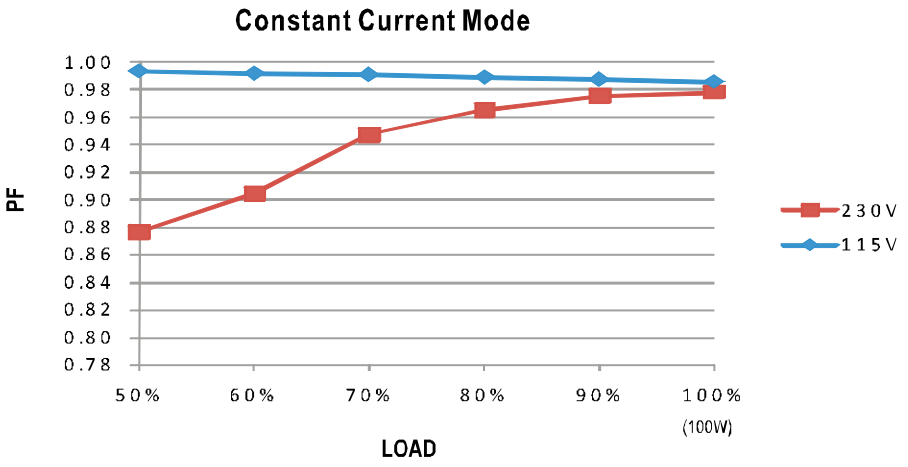
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



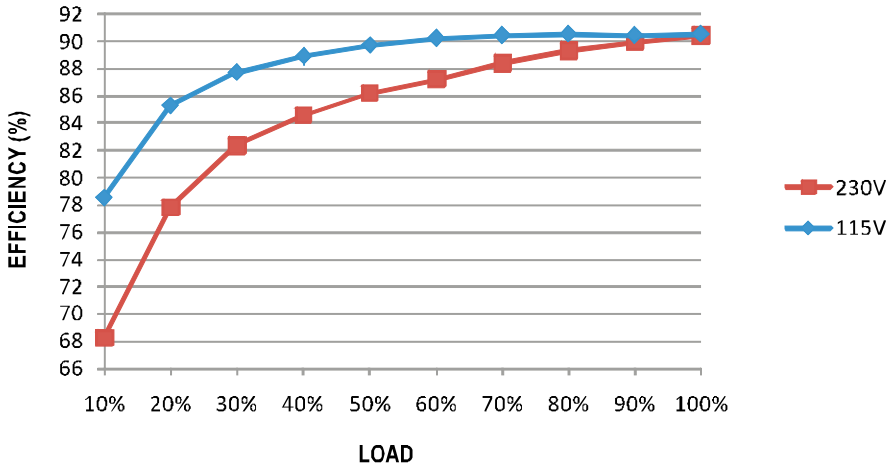
INPUT VOLTAGE (V) 60Hz

■ Power Factor Characteristic



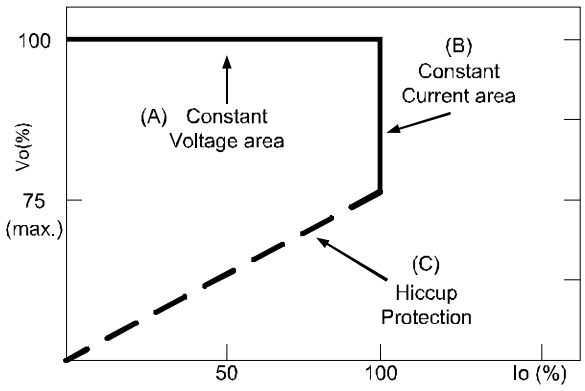
■ EFFICIENCY vs LOAD (48V Model)

PLC-100 series possess superior working efficiency that up to 91% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



Typical LED power supply I-V curve

NIETZ 5W Single Output DC-DC Converter **PSD-05 series**

■ Features :

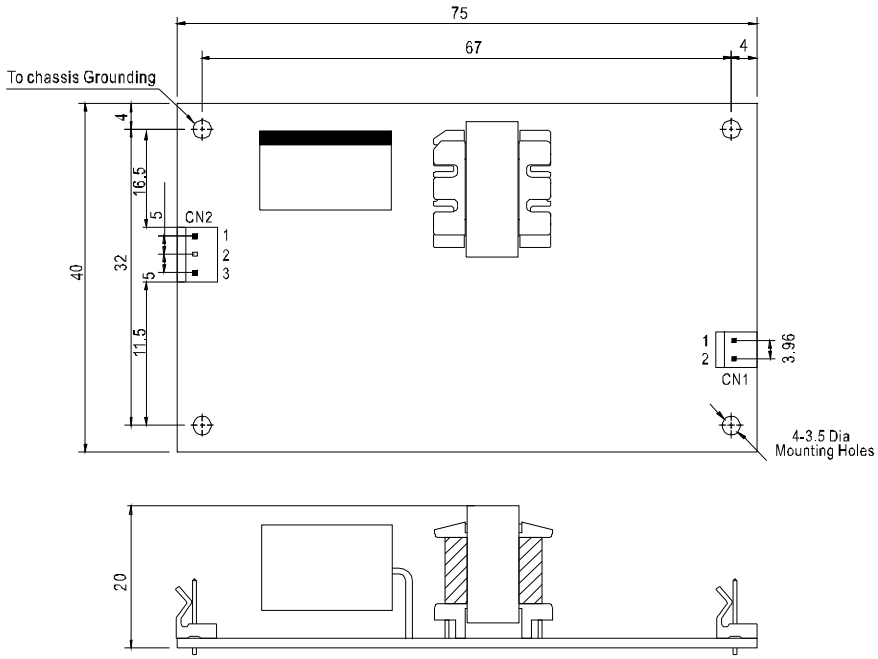
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fix switching frequency at 67KHz
- Low cost
- High reliability

SPECIFICATION

MODEL		PSD-05-05	PSD-05-12	PSD-05-24
OUTPUT	DC VOLTAGE	5V	12V	24V
	RATED CURRENT	1A	0.45A	0.22A
	CURRENT RANGE	0 ~ 1A	0 ~ 0.5A	0 ~ 0.25A
	RATED POWER	5W	5.4W	5.28W
	RIPPLE & NOISE (max.) Note.2	50mVp-p	100mVp-p	150mVp-p
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%
	LINE REGULATION	±1.0%	±1.0%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%
	SETUP, RISE, HOLD UP TIME	1.2s, 20ms,--- at full load		
INPUT	VOLTAGE RANGE	36 ~ 72VDC		
	EFFICIENCY(Typ.)	75%	78%	78%
	DC CURRENT(Typ.)	0.15A/48V		
PROTECTION	OVERLOAD	Above 105% rated output power		
		Protection type : Fold back current limiting, recovery automatically after fault condition is removed		
	OVER VOLTAGE	5.75~ 6.75V	13.8~16.2V	27.6~ 32.4V
		Protection type : Hiccup mode, recovery automatically after fault condition is removed		
	OVER TEMPERATURE	U1 Tj140 typically(U1)detect on main control IC		
		Protection type : Hiccup mode, recovery automatically after temperature goes down		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
SAFETY & EMC	WITHSTAND VOLTAGE	I/P-O/P:2KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B		
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 6, 8 ENV50204, EN55024, EN61000-6-1, light industry level, criteria A		
OTHERS	DIMENSION	75*40*20mm (L*W*H)		
	PACKING	50mg;120pcs/6.25Kg/1CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4.The power supply is considered a component which will be installed into a final equipment.The final equipment must be re-confirmed that it still meets EMC directives.			

■ Mechanical Specification

Unit:mm



DC Input Connector (CN2) : MOLEX5285-03 or equivalent

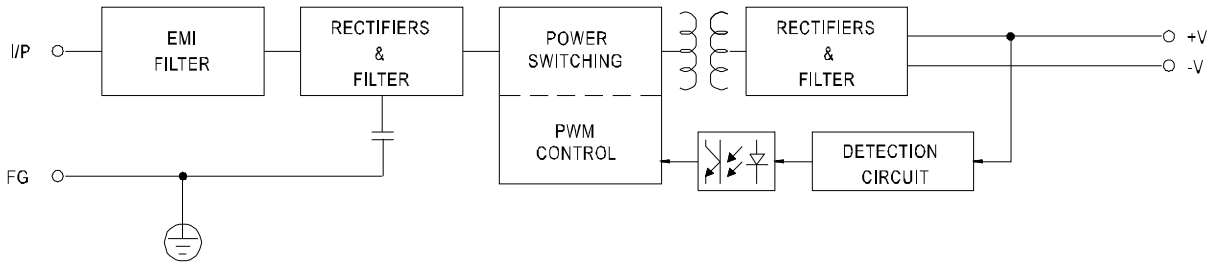
Pin No.	Assignment	Mating Housing	Terminal
1	FG	MOLEX 5058 or equivalent	MOLEX 2478 or equivalent
2	(-V)		
3	(+V)		

DC Output Connector (CN1) : MOLEX5273-02 or equivalent

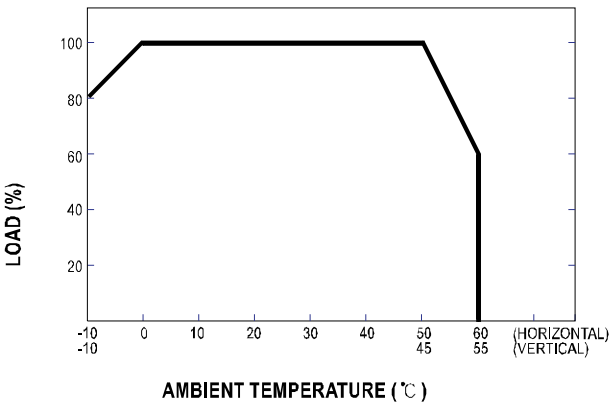
Pin No.	Assignment	Mating Housing	Terminal
1	+V	MOLEX 5195 or equivalent	MOLEX 5194 or equivalent
2	-V		

■ Block Diagram

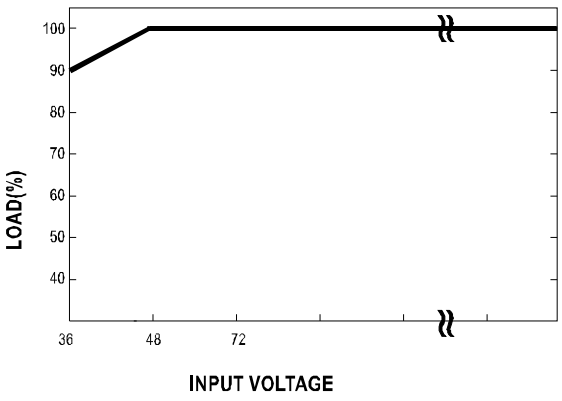
fosc : 67KHz



■ Derating Curve



■ Static Characteristics



NIETZ 15W DC-DC Single Output Switching Power Supply PSD-15 series

■ Features :

- Protections:Short circuit/Over load /Over voltage/Polarity
- Cooling by free air convection
- 100% full load burn-in test
- Low cost
- High reliability

SPECIFICATION

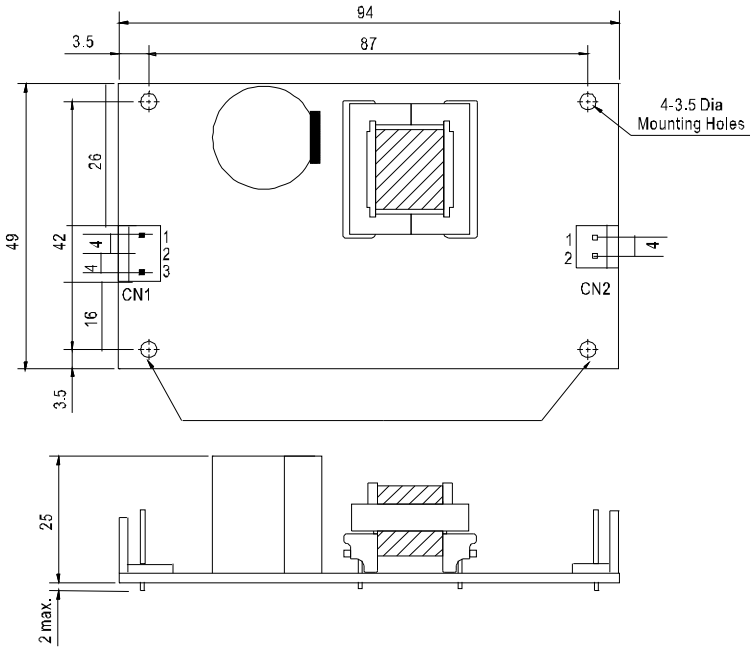
MODEL		PSD-15A-05	PSD-15B-05	PSD-15C-05	PSD-15A-12	PSD-15B-12	PSD-15C-12	PSD-15A-24	PSD-15B-24	PSD-15C-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	3A			1.25A			0.6A		
	CURRENT RANGE	0 ~ 3A			0 ~ 1.25A			0 ~ 0.6A		
	RATED POWER	15W			15W			14.4W		
	RIPPLE & NOISE (max.) Note.2	50mVp-p			100mVp-p			100mVp-p		
	VOLTAGE TOLERANCE Note.3	±2.0%			±2.0%			±2.0%		
	LINE REGULATION	±1.0%			±1.0%			±0.5%		
	LOAD REGULATION	±1.0%			±1.0%			±0.5%		
	SETUP, RISE, HOLD UP TIME	2.5s, 25ms, ----/12VDC/24VDC/48VDC at full load								
INPUT	VOLTAGE RANGE	A: 9.2 ~18VDC (12VDC) B:18 ~ 36VDC (24VDC) C:36~72VDC(48VDC)								
	EFFICIENCY(Typ.)	74%	78%	78%	67%	78%	78%	72%	78%	79%
	DC CURRENT(Typ.)	1.9A/12VDC 0.9A/24VDC 0.45A/48VDC								
PROTECTION	OVER LOAD	105% -150% rated output power								
		Protection type : hiccup mode ,recovery automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V			13.8~ 16.2V			27.6 ~ 32.4V		
		Protection type : Shut off o/p voltage, clamping by zener diode								
ENVIRONMENT	WORKING TEMP.	-10~ +60℃ (Refer to output load derating curve), 20 ~ 90% RH non-condensing								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes								
SAFETY & EMC	WITHSTAND VOLTAGE	I/P-O/P:2KVAC								
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC / 25°C/ 70% RH								
	EMI CONDUCTION&RADIATION	Compliance to EN55022(CISPR22) CLASS B								
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 6, 8 EN55024, EN61000-6-1 Light industry level, criteria A								
OTHERS	MTBF	740.4Khrs min. MIL-HDBK-217F(25℃)								
	DIMENSION	94*49*25mm (L*W*H)								
	PACKING	81mg;120pcs/10.72Kg								

NOTE

1. All parameters NOT specially mentioned are measured at normal input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measued at 20 MHz of bandwidth by using a 12inch twisted pair-wire termined with a 0.1uf & 47uf capacitor.
3. Tolerance:includes set up tolerance,line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies.

■ Mechanical Specification

Unit:mm



DC Input Connector (CN1) : JST B3P-VH or equivalent

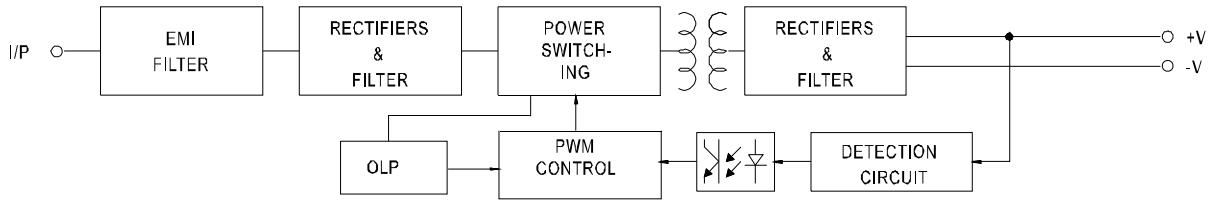
Pin No.	Assignment	Mating Housing	Terminal
1	-V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	+V		

DC Output Connector (CN2) : JST B2P-VH or equivalent

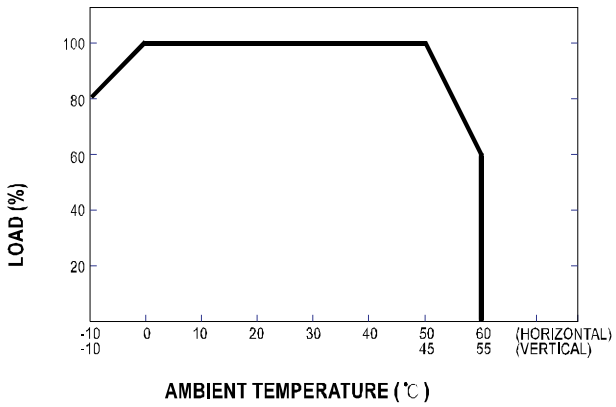
Pin No.	Assignment	Mating Housing	Terminal
1	-V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	+V		

■ Block Diagram

fosc : 100KHz



■ Output Derating



NIETZ 30W Single Output DC-DC Converter **PSD-30 series**

■ Features :

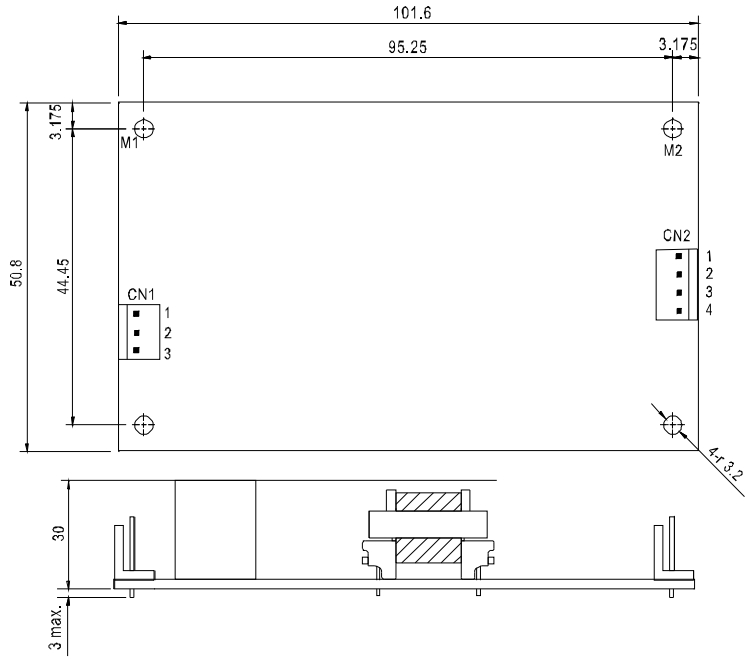
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage/Reverse polarity
- 1500VAC I/O isolation
- Cooling by free air convection
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Low cost
- High reliability

SPECIFICATION

MODEL		PSD-30A-5	PSD-30B-5	PSD-30C-5	PSD-30A-12	PSD-30B-12	PSD-30C-12	PSD-30A-24	PSD-30B-24	PSD-30C-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	5A			2.5A			1.25A		
	CURRENT RANGE	0 ~ 5A			0 ~ 2.5A			0 ~ 1.25A		
	RATED POWER	25W			30W			30W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC			11 ~ 13.5VDC			22 ~ 26VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±1.0%			±1.0%			±1.0%		
	LOAD REGULATION	±1.0%			±1.0%			±1.0%		
	SETUP, RISE, HOLD UP TIME	2s, 50ms, ------ at full load								
INPUT	VOLTAGE RANGE	A:9 ~ 18VDC	B:18 ~ 36VDC		C:36 ~ 72VDC					
	EFFICIENCY (Typ.)	77%	79%	80%	77%	80%	82%	78%	83%	83%
	DC CURRENT	4.5A/12V			2.5A/24V			1.1A/48V		
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	6 ~ 7.5V			14 ~ 16.5V			27 ~ 32.5V		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	REVERSE POLARITY	By internal fuse open								
ENVIRONMENT	WORKING TEMP.	-20 ~ +55℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Design refer to LVD								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B								
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; ENV50204, EN 55024, light industry level, criteria A								
OTHERS	MTBF	902.4K hrs min. MIL-HDBK-217F(25℃)								
	DIMENSION	101.6*50.8*30mm (L*W*H)								
	PACKING	0.15kg8 4pcs/12.6kg/0.82CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.									

■ Mechanical Specification

Unit:mm



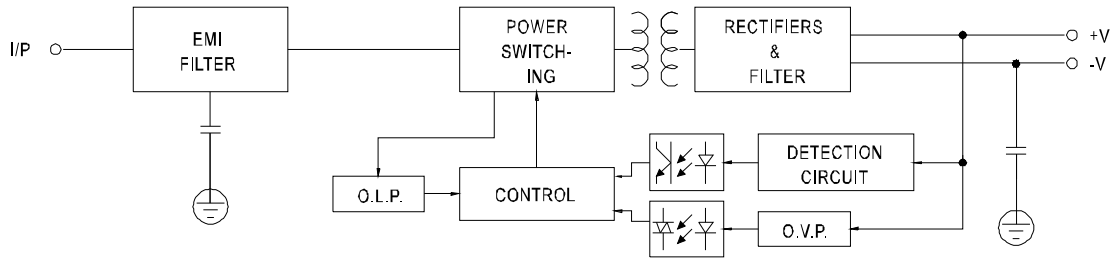
AC Input Connector (CN1) : JST B3P-VH-B or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	DC-	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3	DC+		
2	NC		

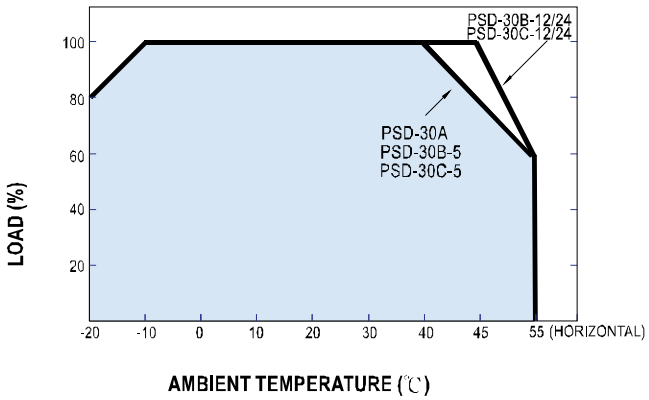
DC Output Connector (CN2) : JST B4P-VH-B or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2	+V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4	-V		

■ Block Diagram



■ Derating Curve



NIETZ 45W DC-DC Single Output Switching Power Supply PSD-45 series

■ Features :

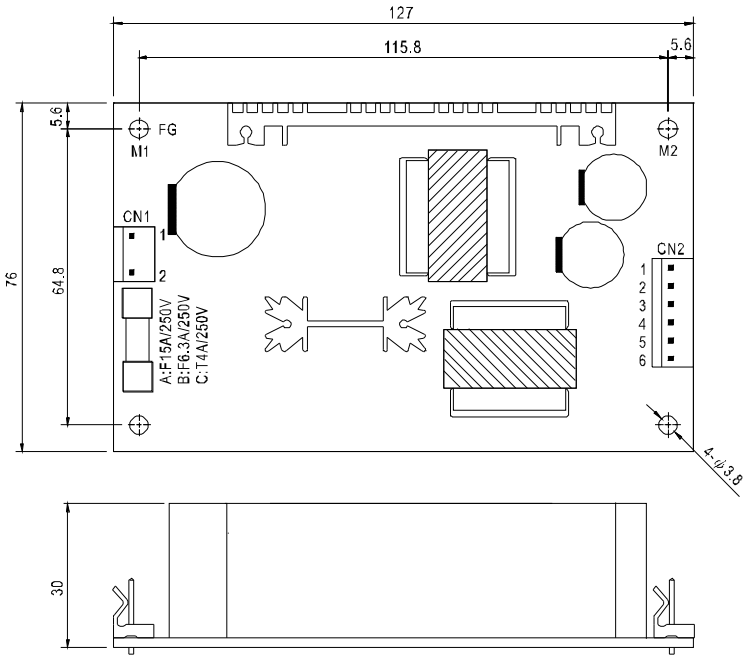
- 2:1 wide input range
- Protections:Short circuit/Over load /Over voltage/Polarity
- Cooling by free air convection
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fixed switching frequency at 96KHZ
- Low cost
- High reliability

SPECIFICATION

MODEL		PSD-45A-05	PSD-45B-05	PSD-45C-05	PSD-45A-12	PSD-45B-12	PSD-45C-12	PSD-45A-24	PSD-45B-24	PSD-45C-24
OUTPUT	DC VOLTAGE	5V	5V	5V	12V	12V	12V	24V	24V	24V
	RATED CURRENT	6A	9A	9A	2.5A	3.75A	3.75A	1.25A	1.875A	1.875A
	CURRENT RANGE	0 ~ 6A	0 ~ 9A	0 ~ 9A	0 ~ 2.5A	0 ~ 3.75A	0 ~ 3.75A	0 ~ 1.25A	0 ~ 1.875A	0 ~ 1.875A
	RATED POWER	30W	45W	45W	30W	45W	45W	30W	45W	45W
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ RANGE	4.5 ~ 5.5V			10.8 ~13.2V			21.6 ~ 26.4V		
	VOLTAGE TOLERANCE Note.3	±2.0%			±2.0%			±2.0%		
	LINE REGULATION	±1.0%			±1.0%			±0.5%		
	LOAD REGULATION	±1.0%			±1.0%			±0.5%		
	SETUP, RISE, HOLD UP TIME	1000ms, 50ms, ----/12VDC/24VDC at full load; 1500ms,50ms,----48VDC at full load								
INPUT	VOLTAGE RANGE	A: 9.2 ~18VDC (12VDC) B:18 ~ 36VDC (24VDC) C:36~72VDC(48VDC)								
	EFFICIENCY(Typ.)	74%	77%	80%	78%	82%	83%	79%	85%	86%
	DC CURRENT(Typ.)	3.5A/12VDC 2.5A/24VDC 1.2A/48VDC								
PROTECTION	OVER LOAD	105% -160% rated output power								
		Protection type :shut down, Re-power on after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V/10%load			13.8~ 16.2V/10%load			27.6 ~ 32.4V/10%load		
		Protection type : Hiccup mode, recovery automatically after fault condition is removed								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve),20~90%RH non-condensing								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	EN60950-1 CB approved by TUV								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25°C/ 70% RH								
	EMI CONDUCTION&RADIATION	Compliance to EN55022(CISPR22) CLASS B								
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 6, 8 EN55024, EN61000-6-1 Light industry level, criteria A								
OTHERS	MTBF	329.3Khrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	127*76*30mm (L*W*H)								
	PACKING	0.19Kg;72pcs/15.6Kg/1.35CUFT								
NOTE	1.All parameters NOT specially mentioned are measured at normal input,rated load and 25℃ of ambient temperature. 2.Ripple & noise are measued at 20 MHz of bandwidth by using a 12inch twisted pair-wire termined with a 0.1uf & 47uf capacitor. 3.Tolerance:includes set up tolerance,line regulation and load regulation. 4.The interval of turning ON and OFF the power supply continuously is 2 seconds.									

■ Mechanical Specification

Unit:mm



DC Input Connector (CN1) : Molex 5277-02 or equivalent

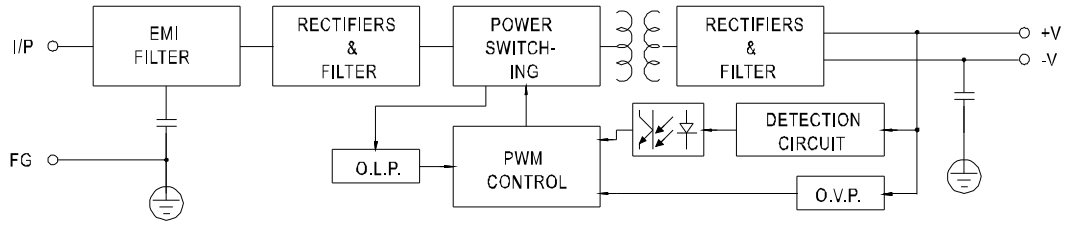
Pin No.	Assignment	Mating Housing	Terminal
1	Vin-	Molex 5195 or equivalent	Molex 5194 or equivalent
2	Vin+		

DC Output Connector (CN2) : Molex 5273-06 or equivalent

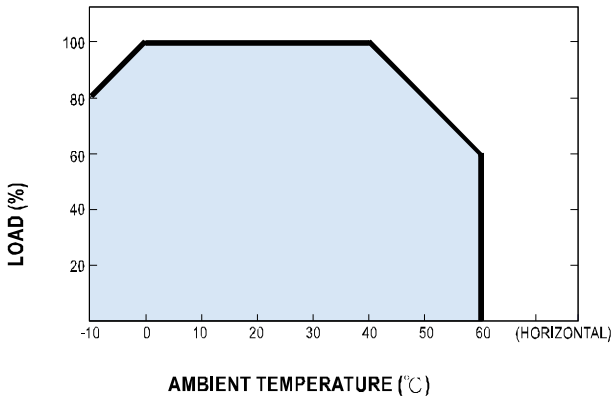
Pin No.	Assignment	Mating Housing	Terminal
1,2,3	+V	Molex 5195 or equivalent	Molex 5194 or equivalent
4,5,6	-V		

■ Block Diagram

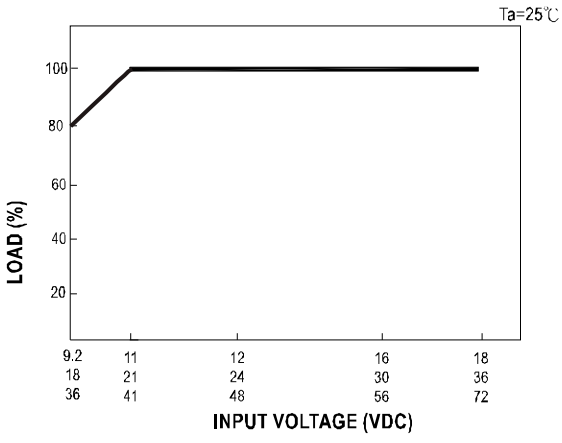
fosc :96KHz



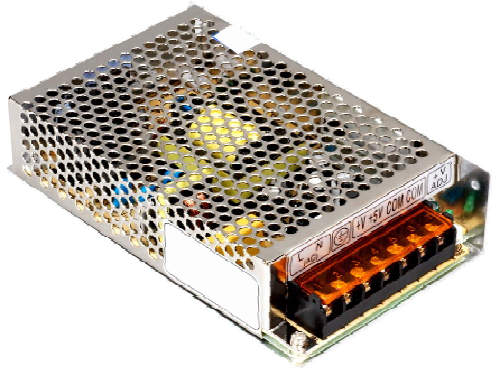
■ Output Derating



■ Static Characteristics



NIETZ 60W Quad Output Switching Power Supply Q-60 series



■ Features :

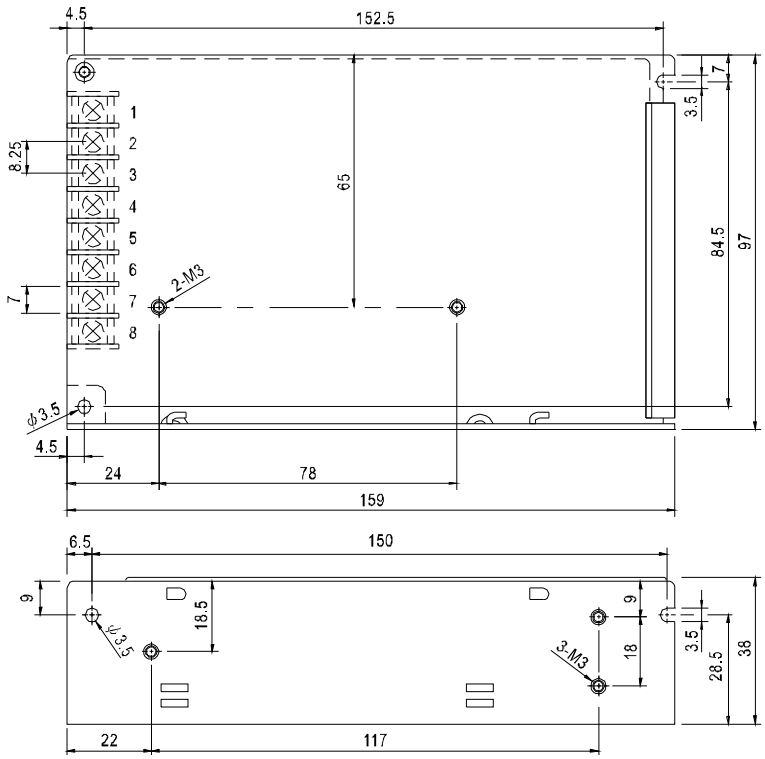
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 35KHz

SPECIFICATION

MODEL		Q-60B				Q-60C				Q-60D			
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH4	CH1	CH2	CH3	CH4	CH1	CH2	CH3	CH4
	DC VOLTAGE	5V	12V	-5V	-12V	5V	15V	-5V	-15V	5V	12V	24V	-12V
	RATED CURRENT	5.5A	2A	0.5A	0.5A	5.5A	1.5A	0.5A	0.5A	4A	1A	1A	0.5A
	CURRENT RANGE	0.5 ~ 8A	0.1 ~ 3A	0 ~ 1A	0 ~ 1A	0.5 ~ 8A	0.1 ~ 3A	0 ~ 1A	0 ~ 1A	0.5 ~ 8A	0.1 ~ 3A	0.1 ~ 1.5A	0 ~ 1A
	RATED POWER	60W				60W				62W			
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	100mVp-p	120mVp-p	100mVp-p	120mVp-p	100mVp-p	120mVp-p	100mVp-p	120mVp-p	150mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V				CH1: 4.75 ~ 5.5V				CH1: 4.75 ~ 5.5V			
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±5.0%	±5.0%	±2.0%	+8,-4%	±5.0%	±5.0%	±2.0%	±6.0%	+8,-4%	±5.0%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±0.5%	±0.5%	±2.0%	±0.5%	±0.5%	±0.5%	±1.0%	±2.0%	±0.5%
	LOAD REGULATION	±0.5%	±4.0%	±1.0%	±1.0%	±0.5%	±4.0%	±1.0%	±1.0%	±0.5%	±4.0%	±4.0%	±1.0%
	SETUP, RISE TIME	800ms, 20ms/230VAC 1600ms, 20ms/115VAC at full load											
	HOLD UP TIME (Typ.)	70ms/230VAC 15ms/115VAC at full load											
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY (Typ.)	70%				72%				75%			
	AC CURRENT (Typ.)	2A/115VAC 0.8A/230VAC											
	INRUSH CURRENT (Typ.)	COLD START 15A/115VAC 30A/230VAC											
	LEAKAGE CURRENT	<1mA / 240VAC											
PROTECTION	OVERLOAD	105 ~ 150%/115VAC rated output power											
		Protection type : Hiccup mode, recovers automatically after fault condition is removed											
	OVER VOLTAGE	5V: 5.75 ~ 6.75VDC											
		Protection type : Hiccup mode, recovers automatically after fault condition is removed											
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃) on +5V output											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1 approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH											
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3											
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, light industry level, criteria A											
OTHERS	MTBF	284.8K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	159*97*38mm (L*W*H)											
	PACKING	0.56Kg; 24pcs/14.4Kg/0.75CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

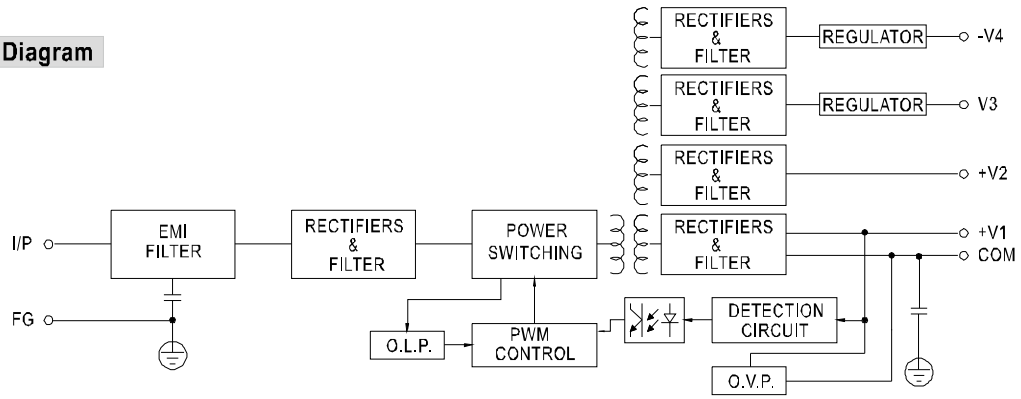
Case No. 901 Unit:mm



Terminal Pin No. Assignment

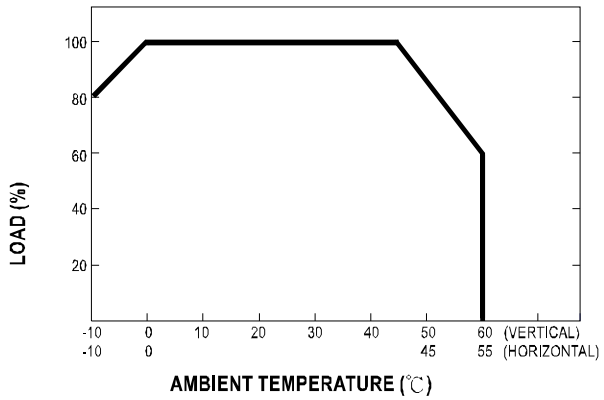
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT -V4
2	AC/N	6	DC OUTPUT +V2
3	FG ⏚	7	DC OUTPUT COM
4	DC OUTPUT V3	8	DC OUTPUT +V1

■ Block Diagram

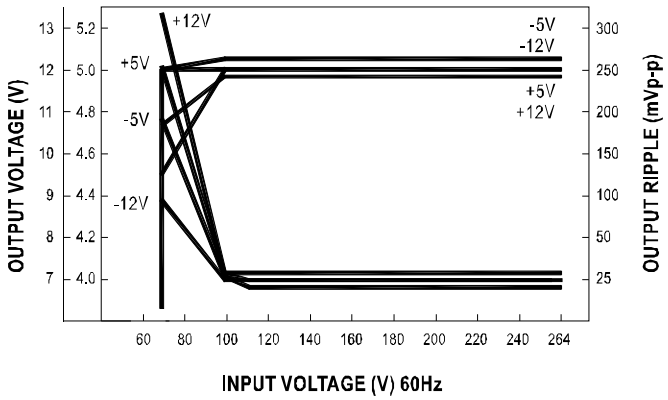


fosc : 35KHz

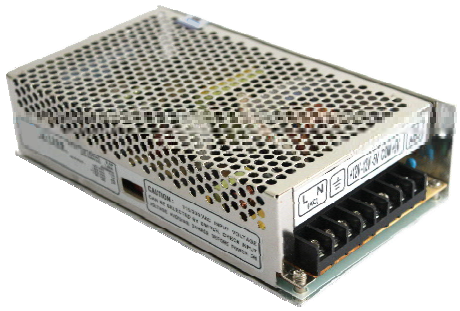
■ Derating Curve



■ Static Characteristics



NIETZ 120W Quad Output Switching Power Supply Q-120 series



■ Features :

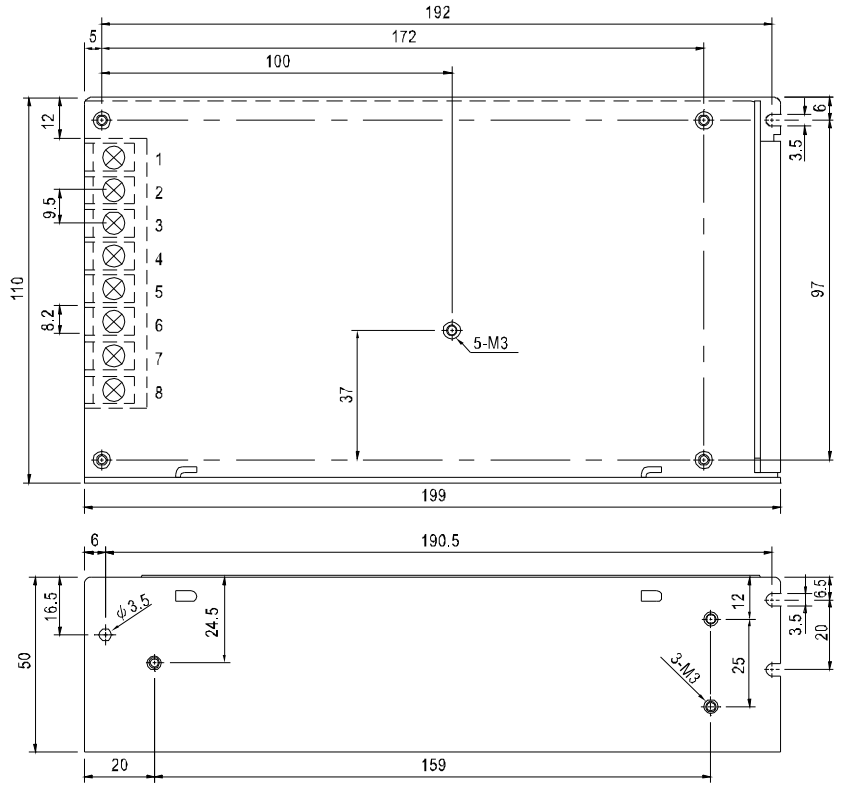
- AC input range selected by switch
- Protections: Short circuit / Overload / Over voltage
- 100% full load burn-in test
- Fixed switching frequency at 25KHz

SPECIFICATION

MODEL		Q-120B				Q-120C				Q-120D			
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH4	CH1	CH2	CH3	CH4	CH1	CH2	CH3	CH4
	DC VOLTAGE	5V	12V	-5V	-12V	5V	15V	-5V	-15V	5V	12V	24V	-12V
	RATED CURRENT	11A	4A	1A	1A	10A	3.5A	1A	1A	8A	2A	2A	1A
	CURRENT RANGE	2 ~ 12A	0.5 ~ 5A	0.2 ~ 1A	0.2 ~ 1A	2 ~ 12A	0.5 ~ 5A	0.2 ~ 1A	0.2 ~ 1A	2 ~ 12A	0.2 ~ 5A	0.2 ~ 2A	0.2 ~ 1A
	RATED POWER	120W				122.5W				124W			
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	120mVp-p	80mVp-p	150mVp-p	80mVp-p	150mVp-p	80mVp-p	120mVp-p	180mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V											
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±6.0%	±6.0%	±2.0%	+10,-5%	±6.0%	+10,-5%	±2.0%	±6.0%	±6.0%	±6.0%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±0.5%	±5.0%	±5.0%	±5.0%	±0.5%	±6.0%	±5.0%	±6.0%	±0.5%	±5.0%	±5.0%	±5.0%
	SETUP, RISE, HOLD UP TIME	200ms, 50ms, 20ms at full load											
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by switch 240 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY (Typ.)	77%				76%				80%			
	AC CURRENT	2.8A/115VAC 1.6A/230VAC											
	INRUSH CURRENT (max.)	COLD START 35A											
	LEAKAGE CURRENT	<3.5mA / 240VAC											
PROTECTION	OVERLOAD	105 ~ 135% rated output power											
		Protection type : Shut down o/p voltage, re-power on to recover											
	OVER VOLTAGE	CH1:5.75 ~ 6.75VDC											
		Protection type : Shut down o/p voltage, re-power on to recover											
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, CCC GB4943 approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH											
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3											
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A											
OTHERS	MTBF	261.4K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	199*110*50mm (L*W*H)											
	PACKING	0.86Kg; 16pcs/14.7Kg/0.95CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

Case No. 906 Unit:mm



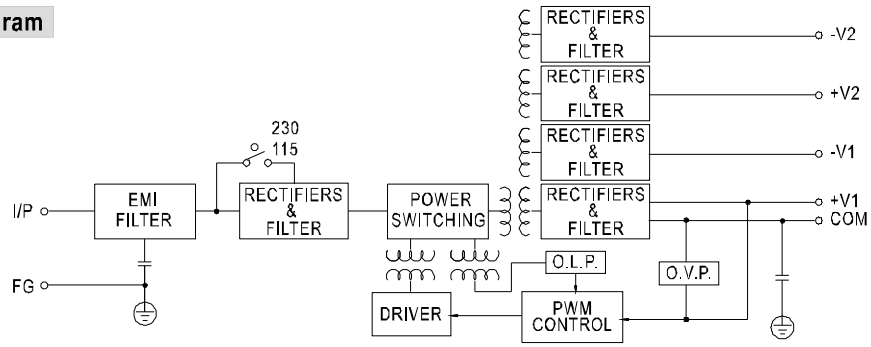
Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	6	DC OUTPUT -V1
2	AC/N	7	DC OUTPUT COM
3	FG ⏚	8	DC OUTPUT +V1
4,5	DC OUTPUT		

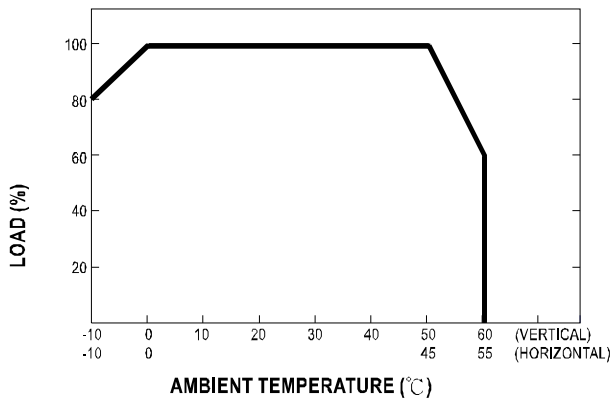
MODEL / Pin No.	Q-120B	Q-120C	Q-120D
4	+12V	+15V	+24V
5	-12V	-15V	+12V

■ Block Diagram

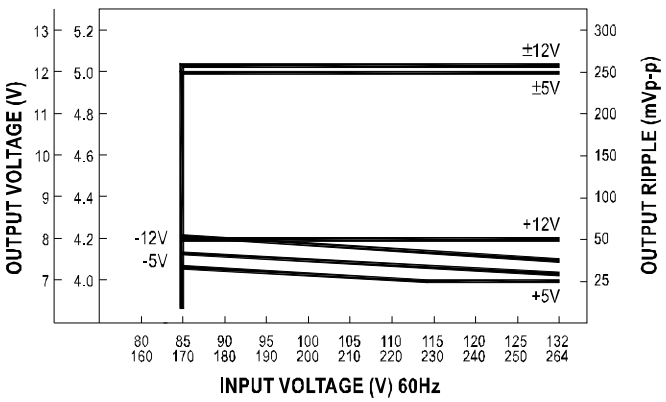
fosc : 83KHz



■ Derating Curve



■ Static Characteristics (B)



NIETZ 15W Single Output Switching Power Supply S-15 series

■ Features :

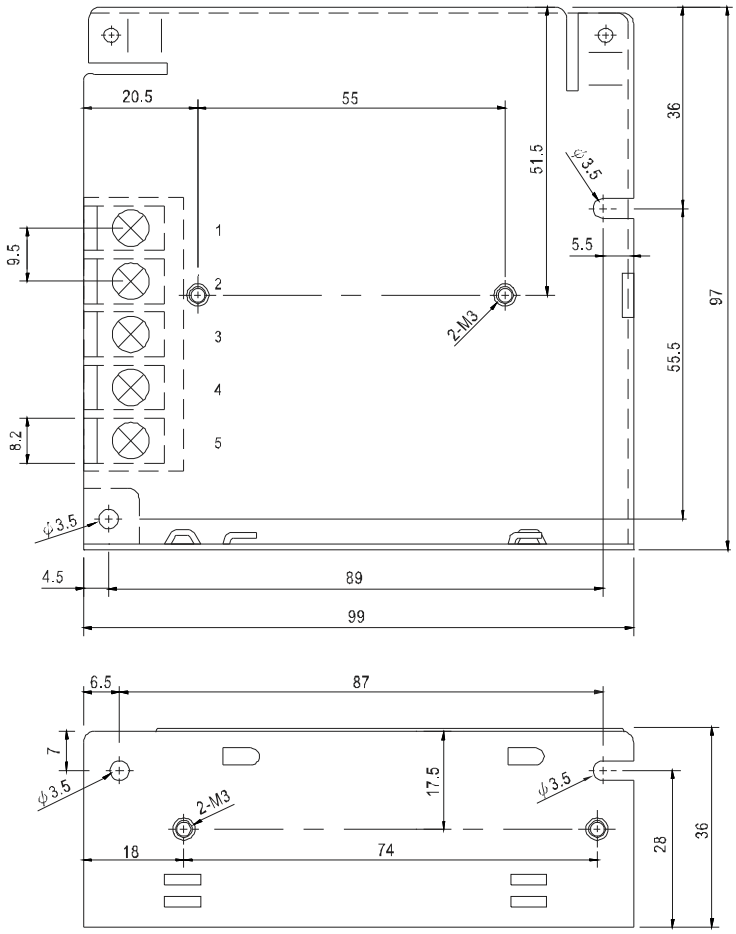
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in
- Fixed switching frequency at 37KHz
- Lost cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		S-15-5	S-15-12	S-15-24
OUTPUT	DC VOLTAGE	5V	12V	24V
	RATED CURRENT	3A	1.3A	0.7A
	CURRENT RANGE	0 ~ 3A	0 ~ 1.3A	0 ~ 0.7A
	RATED POWER	15W	15.6W	16.8W
	RIPPLE & NOISE (max.) Note.2	50mVp-p	50mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 30ms at full load		
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY(Typ.)	65%	68%	72%
	AC CURRENT	0.5A/115VAC 0.25A/230VAC		
	INRUSH CURRENT(max.)	COLD START 15A/115VAC 30A/230VAC		
	LEAKAGE CURRENT	<0.5mA / 240VAC		
PROTECTION	OVER LOAD	105 ~ 150% rated output power		
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.02%/℃ (0 ~ 50℃)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012		
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC		
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B		
OTHERS	MTBF	522.1K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	99*97*36mm (L*W*H)		
	PACKING	0.31Kg; 45pcs/15Kg/0.9CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.			

■ Mechanical Specification

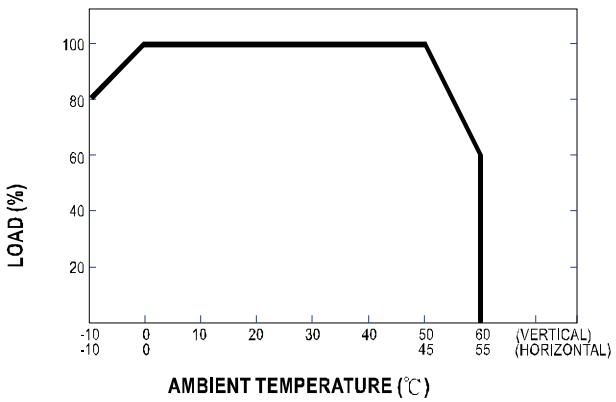
Case No. 905 Unit:mm



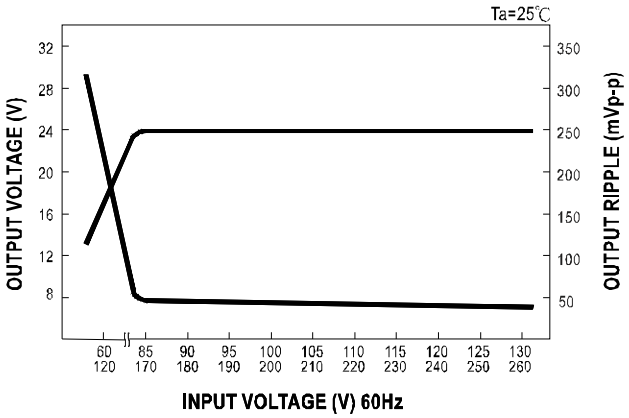
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	DC OUTPUT +V	3	FG ⏚
2	DC OUTPUT -V	4,5	AC INPUT

■ Derating Curve



■ Static Characteristics (24V)



NIETZ 25W Single Output Switching Power Supply **S-25 series**

■ Features :

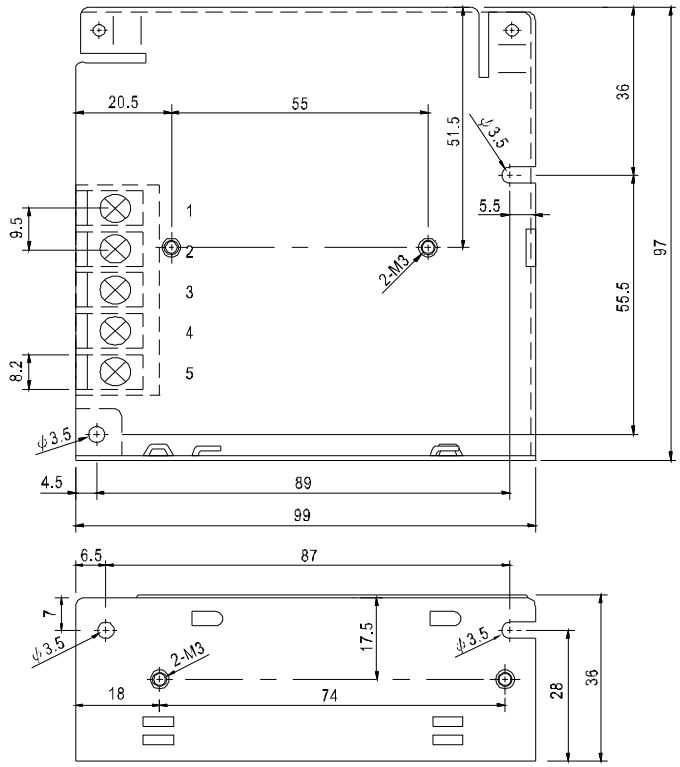
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 56KHz

SPECIFICATION

MODEL		S-25-5	S-25-12	S-25-15	S-25-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	5A	2.1A	1.7A	1.1A
	CURRENT RANGE	0 ~ 5A	0 ~ 2.1A	0 ~ 1.7A	0 ~ 1.1A
	RATED POWER	25W	25.2W	25.5W	26.4W
	RIPPLE & NOISE (max.) Note.2	50mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	300ms, 50ms/230VAC 800ms, 50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	90ms/230VAC 12ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	72%/115VAC	76%/115VAC	77%/115VAC	80%115VAC
	AC CURRENT (Typ.)	0.6A/115VAC 0.35A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 13A/115VAC 25A/230VAC			
	LEAKAGE CURRENT	<0.75mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
	OVER VOLTAGE	5.75V ~ 6.75V	13.8V ~ 16.2V	17.25V ~ 20.25V	27.6V ~ 32.4V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, TUV EN60950-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5, EN55024, light industry level, criteria A			
OTHERS	MTBF	330.8K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	99*97*36mm (L*W*H)			
	PACKING	0.39Kg; 45pcs/18Kg/0.9CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

Case No. 905 Unit:mm

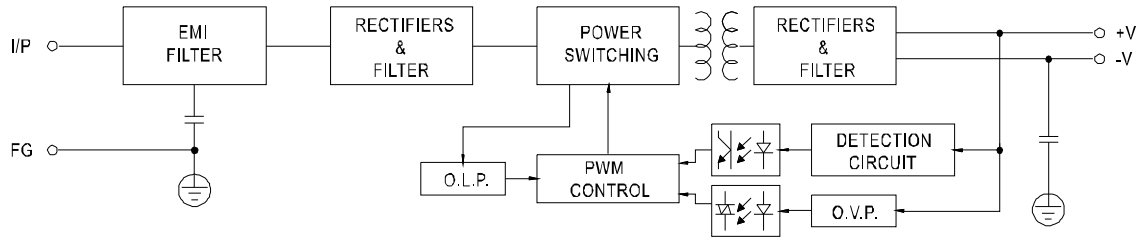


Terminal Pin No. Assignment

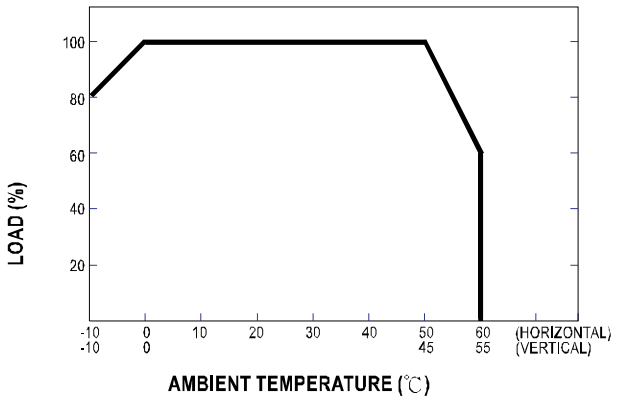
Pin No.	Assignment	Pin No.	Assignment
1	DC OUTPUT -V	4	AC/L
2	DC OUTPUT +V	5	AC/N
3	FG ⏚		

■ Block Diagram

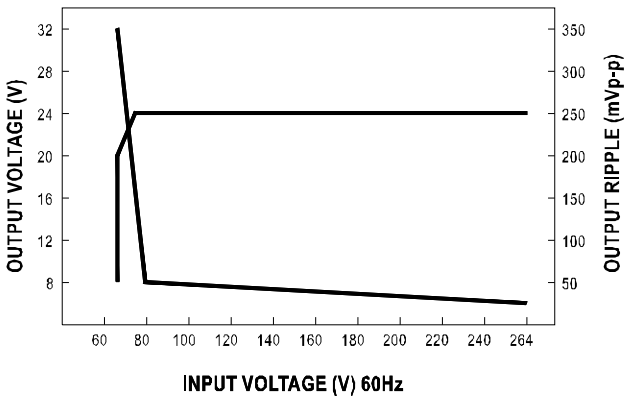
fosc : 56KHz



■ Derating Curve



■ Static Characteristics (24V)



NIETZ 25W Single Output Switching Power Supply **S-25 series**

■ Features :

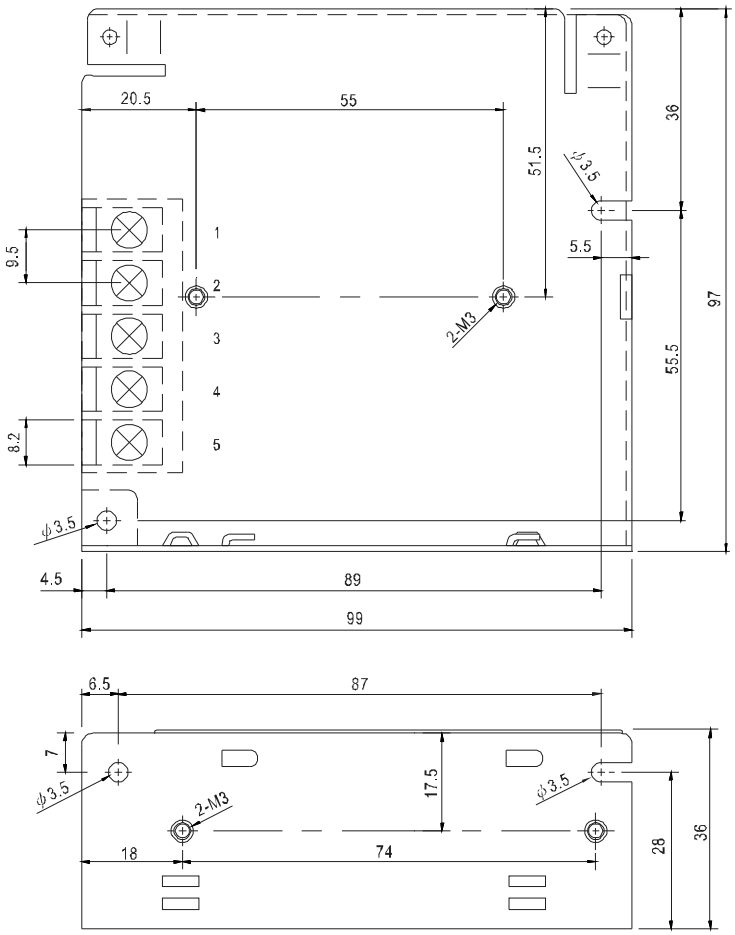
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in
- Fixed switching frequency at 37KHz
- Lost cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		S-25-5	S-25-12	S-25-24
OUTPUT	DC VOLTAGE	5V	12V	24V
	RATED CURRENT	5A	2.1A	1.1A
	CURRENT RANGE	0~5A	0~2.1A	0~1.1A
	RATED POWER	25W	25.2W	26.4W
	RIPPLE & NOISE (max.) Note.2	50mVp-p	50mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 30ms at full load		
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY(Typ.)	65%	68%	72%
	AC CURRENT	0.75A/115V 0.4A/230VAC		
	INRUSH CURRENT(max.)	COLD START 15A/115VAC 30A/230VAC		
	LEAKAGE CURRENT	<0.5mA / 240VAC		
PROTECTION	OVER LOAD	105 ~ 150% rated output power		
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed		
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.02%/℃ (0 ~ 50℃)		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012		
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC		
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B		
OTHERS	MTBF	522.1K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	99*97*36mm (L*W*H)		
	PACKING	0.31Kg; 45pcs/15Kg/0.9CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.			

■ Mechanical Specification

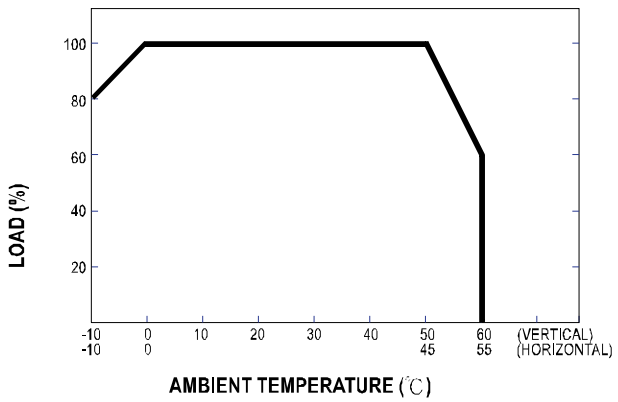
Case No. 905 Unit:mm



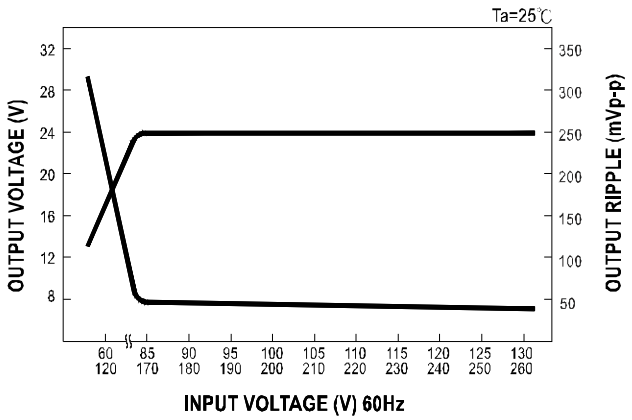
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	DC OUTPUT +V	3	FG ⏚
2	DC OUTPUT -V	4,5	AC INPUT

■ Derating Curve



■ Static Characteristics (24V)



NIETZ 35W Single Output Switching Power Supply **S-35 series**

■ Features :

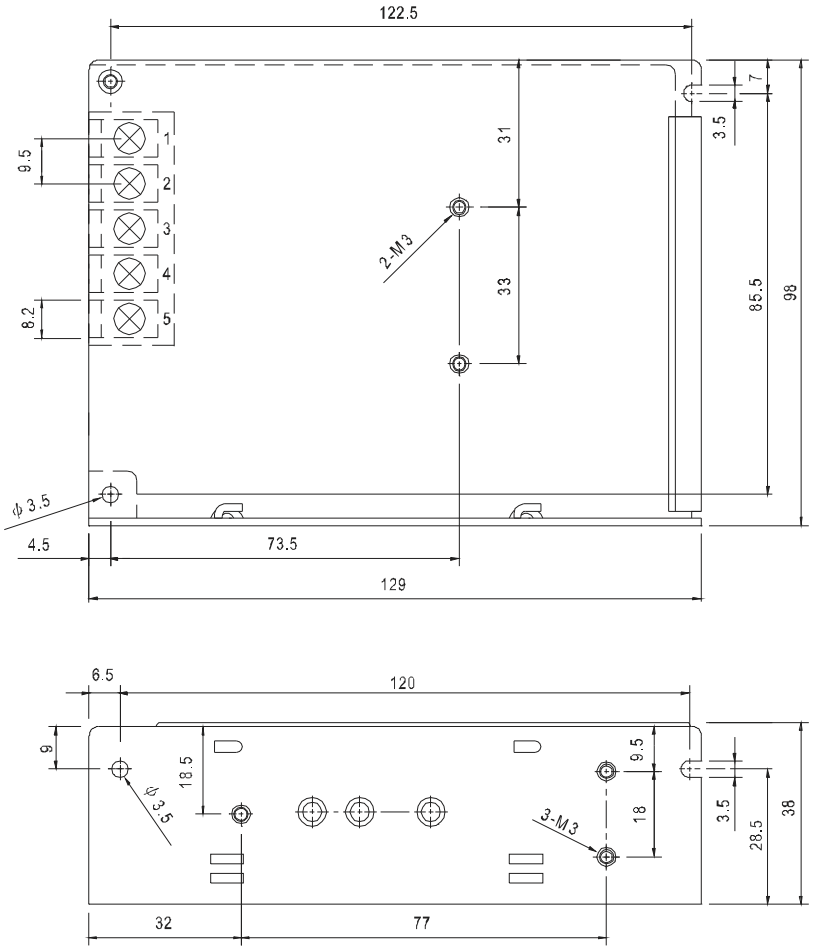
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 37KHz
- 1 year warranty

SPECIFICATION

MODEL		S-35-5	S-35-12	S-35-15	S-35-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	7A	3A	2.4A	1.5A
	CURRENT RANGE	0 ~ 7A	0 ~ 3A	0 ~ 2.4A	0 ~ 1.5A
	RATED POWER	35W	36W	36W	36W
	RIPPLE & NOISE (max.) Note.2	75mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	22.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 30ms at full load			
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	70%	76%	78%	78%
	AC CURRENT	0.8A/115VAC 0.45A/230VAC			
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC			
	LEAKAGE CURRENT	<2mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 150% rated output power			
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B			
OTHERS	MTBF	435.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	129*98*38mm (L*W*H)			
	PACKING	0.41Kg; 30pcs/13.4Kg/0.86CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

■ Mechanical Specification

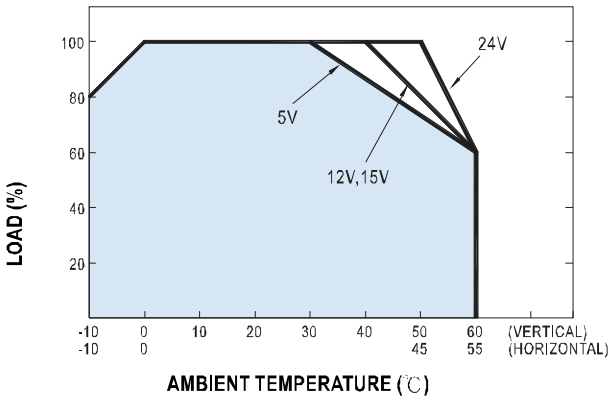
Case No. 903 Unit:mm



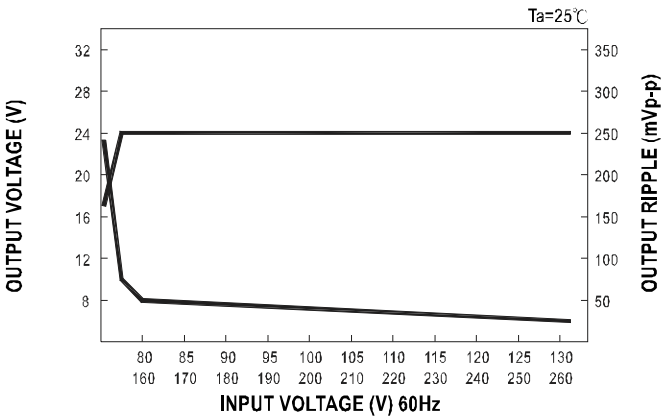
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

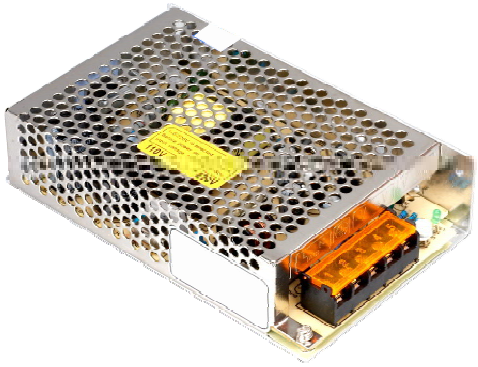
■ Output Derating



■ Static Characteristics (24V)



NIETZ 40W Single Output Switching Power Supply S-40 series



■ Features :

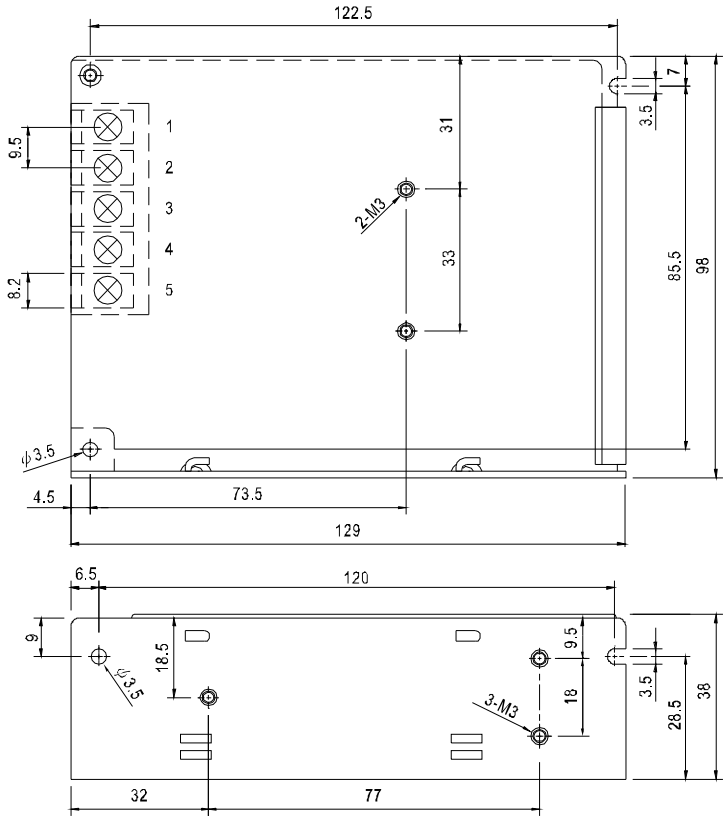
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 75KHz

SPECIFICATION

MODEL		S-40-5	S-40-12	S-40-15	S-40-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	8A	3.5A	2.8A	1.8A
	CURRENT RANGE	0 ~ 8A	0 ~ 3.5A	0 ~ 2.8A	0 ~ 1.8A
	RATED POWER	40W	42W	42W	43.2W
	RIPPLE & NOISE (max.) Note.2	75mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	300ms, 50ms/230VAC 800ms, 50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	70ms/230VAC 15ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	72%/115VAC	76%/115VAC	76%/115VAC	78%/115VAC
	AC CURRENT (Typ.)	1.2A/115VAC 0.6A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC 50A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25	27.6 ~ 32.4V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, UL60950-1, TUV EN60950-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5, EN55024, light industry level, criteria A			
OTHERS	MTBF	314.1K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	129*98*38mm (L*W*H)			
	PACKING	0.44Kg; 30pcs/13.9Kg/0.86CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

Case No. 903 Unit:mm

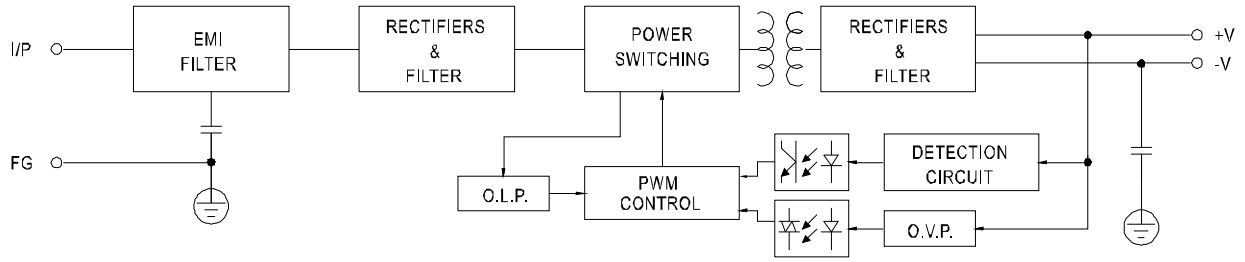


Terminal Pin No. Assignment

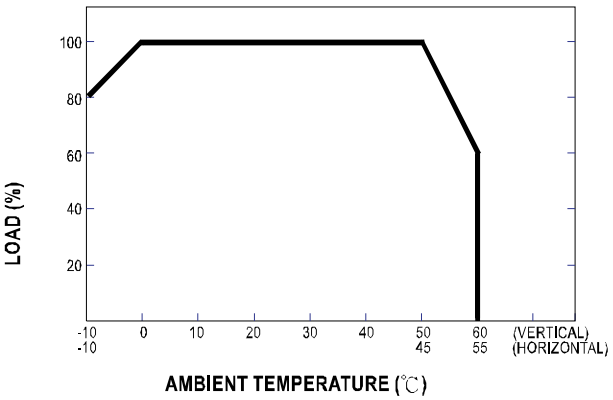
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

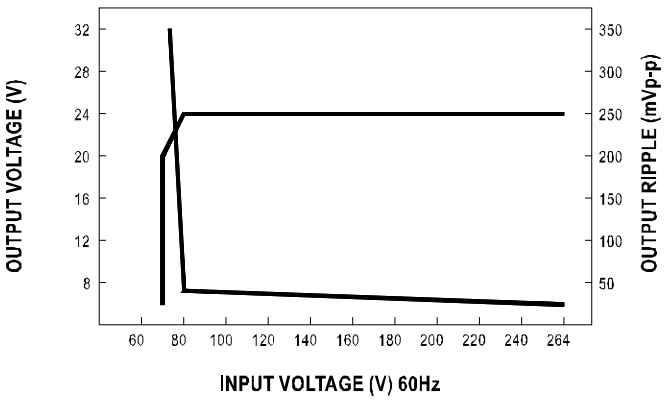
fosc : 75KHz



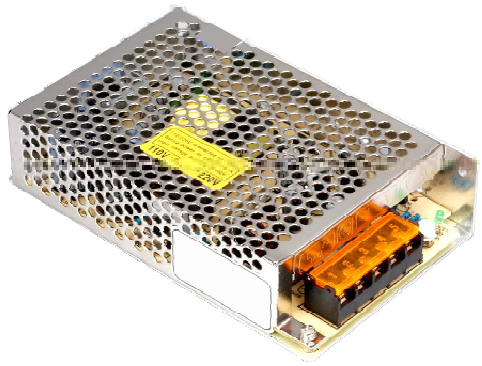
■ Derating Curve



■ Static Characteristics (24V)



NIETZ 50W Single Output Switching Power Supply **S-50 series**



■ Features :

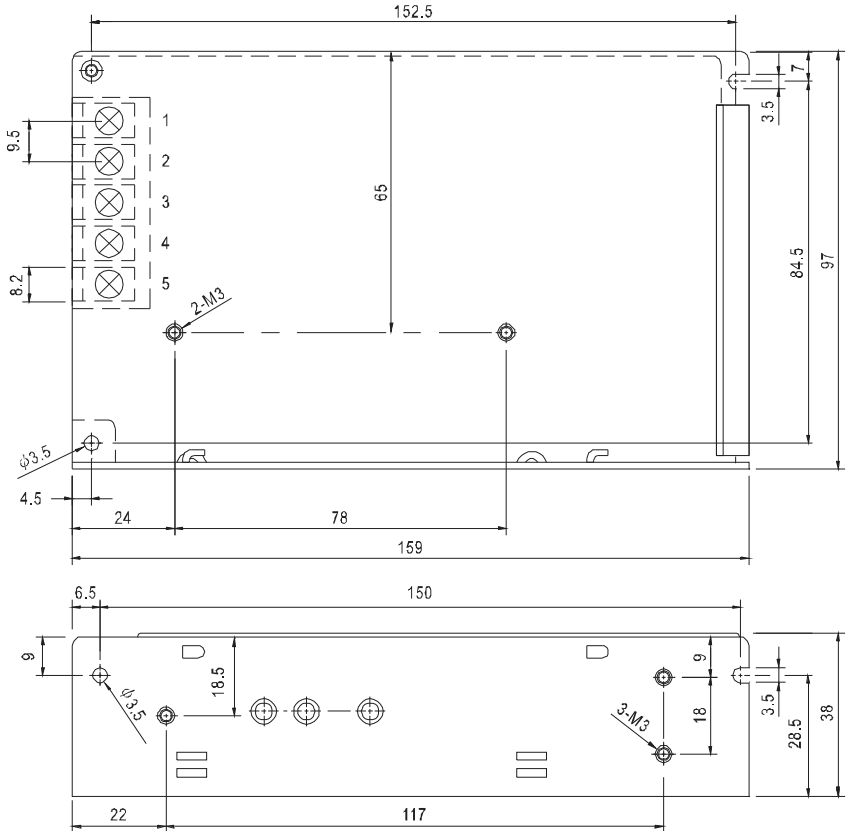
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 27KHz
- 1 year warranty

SPECIFICATION

MODEL		S-50-5	S-50-12	S-50-15	S-50-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	10A	4.2A	3.4A	2.1A
	CURRENT RANGE	0 ~ 10A	0 ~ 4.2A	0 ~ 3.4A	0 ~ 2.1A
	RATED POWER	50W	50.4W	51W	50.4W
	RIPPLE & NOISE (max.) Note.2	75mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	22.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 20ms at full load			
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	71%	78%	78%	82%
	AC CURRENT	1.3A/115VAC 0.65A/230VAC			
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 150% rated output power			
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10~500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B			
OTHERS	MTBF	408.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.51Kg; 24pcs/13.1Kg/0.7CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

■ Mechanical Specification

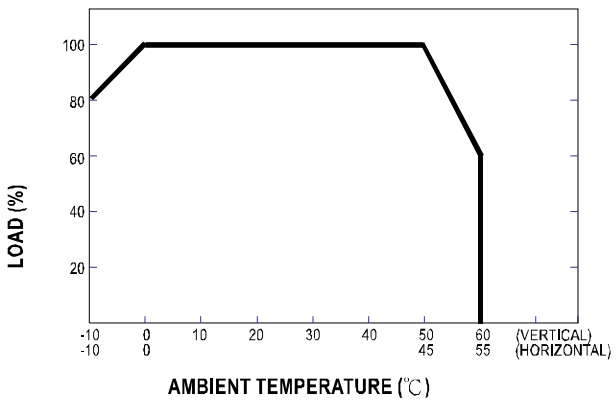
Case No. 901 Unit:mm



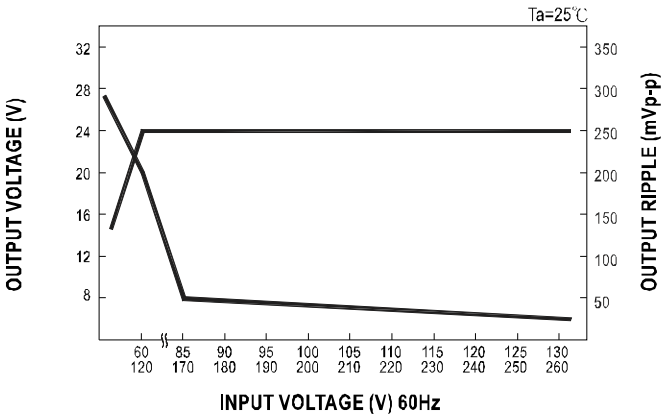
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

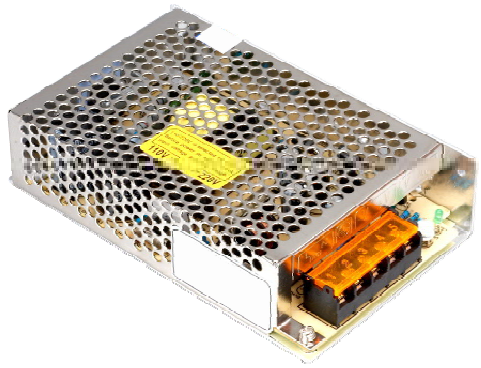
■ Output Derating



■ Static Characteristics (24V)



NIETZ 60W Single Output Switching Power Supply S-60 series



■ Features :

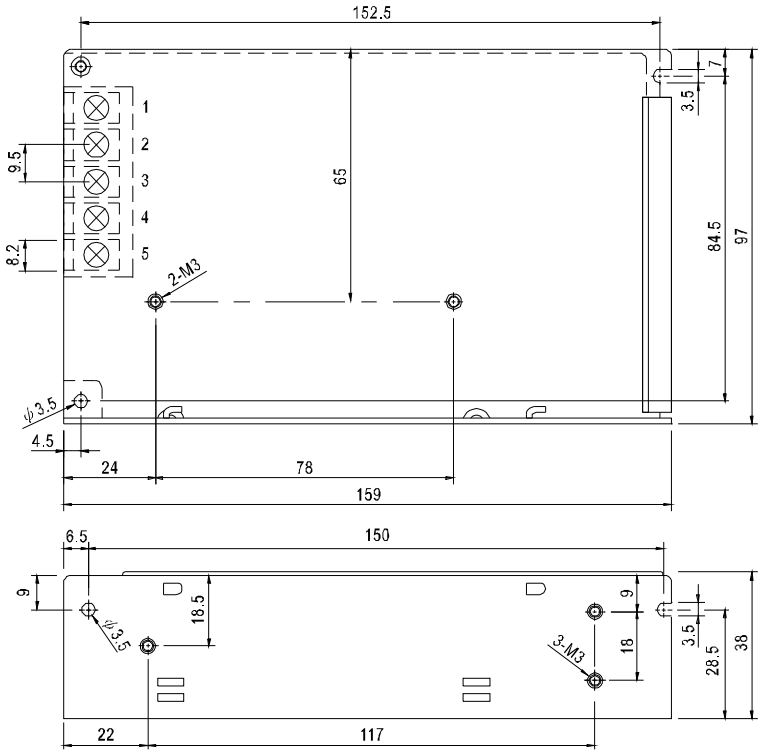
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 77KHz

SPECIFICATION

MODEL		S-60-5	S-60-12	S-60-15	S-60-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	12A	5A	4A	2.5A
	CURRENT RANGE	0 ~ 12A	0 ~ 5A	0 ~ 4A	0 ~ 2.5A
	RATED POWER	60W	60W	60W	60W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	300ms, 50ms/230VAC 800ms, 50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	80ms/230VAC 12ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	73%	76%	77%	79%
	AC CURRENT (Typ.)	2A/115VAC 1A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<3.5mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 150% rated output power			
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25	27.6 ~ 32.4V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, UL60950-1, TUV EN60950-1, CCC GB4943 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A			
OTHERS	MTBF	316.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.51Kg; 24pcs/13.1Kg/0.7CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.				

■ Mechanical Specification

Case No. 901 Unit:mm

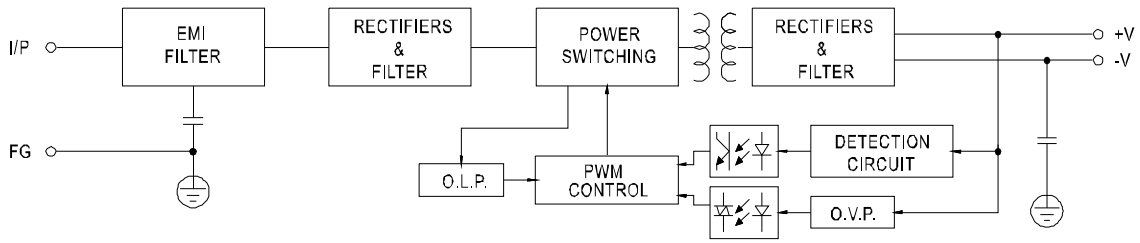


Terminal Pin No. Assignment

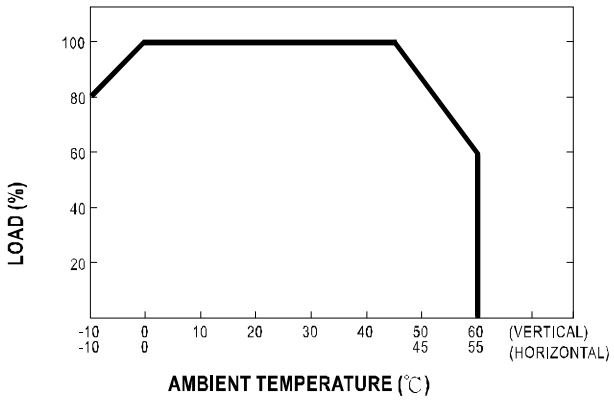
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

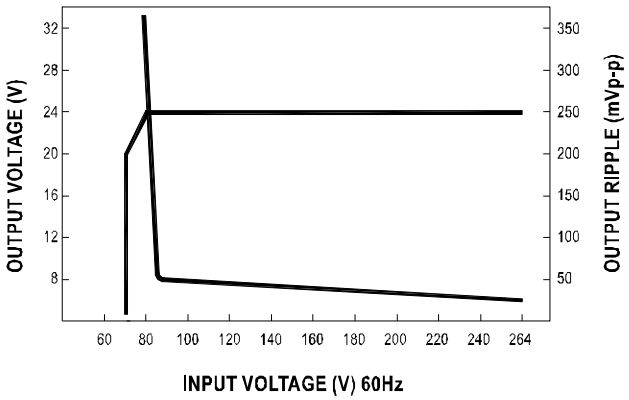
fosc : 77KHz



■ Derating Curve



■ Static Characteristics (24V)



NIETZ 75W Single Output Switching Power Supply **S-75 series**

■ Features :

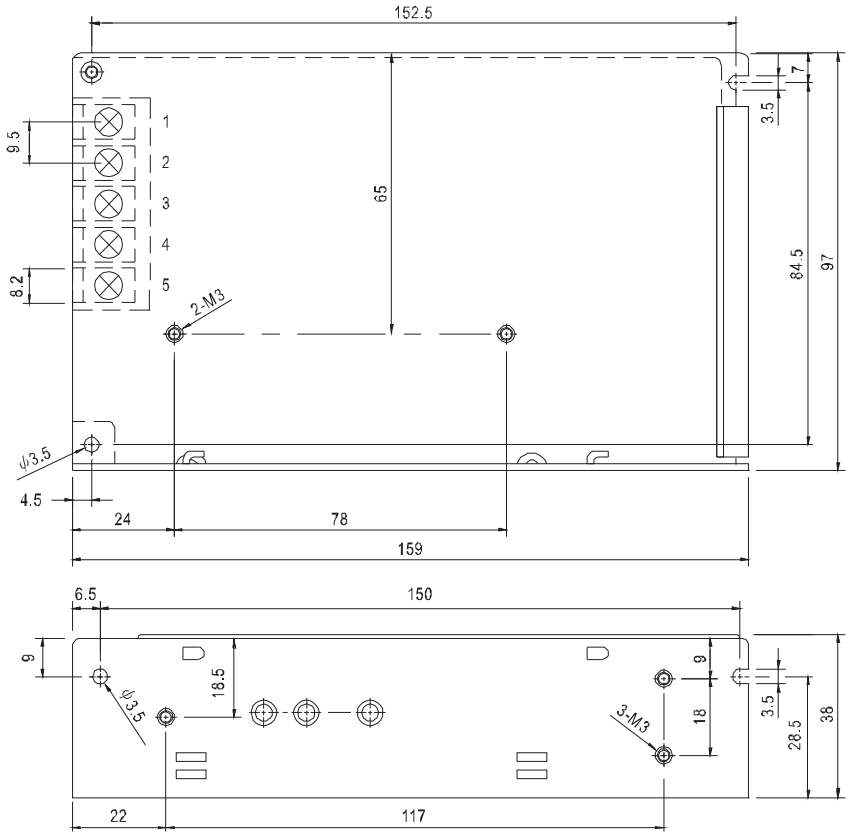
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 27KHz
- 1 year warranty

SPECIFICATION

MODEL		S-75-5	S-75-12	S-75-15	S-75-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	14A	6.3A	5A	3.2A
	CURRENT RANGE	0~14A	0~6.3A	0~5A	0~3.2A
	RATED POWER	70W	75.6W	75W	76.8W
	RIPPLE & NOISE (max.) Note.2	75mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	22.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 20ms at full load			
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY(Typ.)	71%	78%	78%	82%
	AC CURRENT	1.7A/115V 0.85A/230VAC			
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 150% rated output power			
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed.			
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10~500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B			
OTHERS	MTBF	408.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.51Kg; 24pcs/13.1Kg/0.7CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.				

■ Mechanical Specification

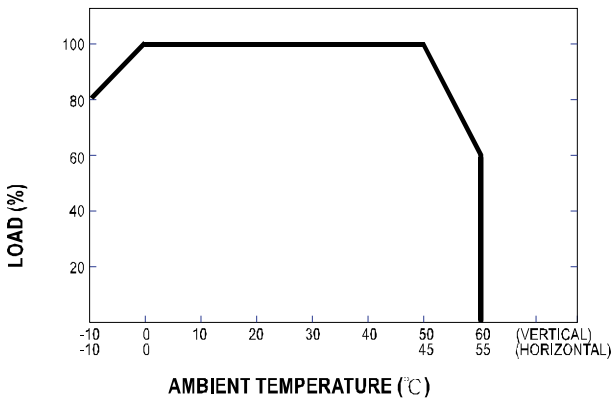
Case No. 901 Unit:mm



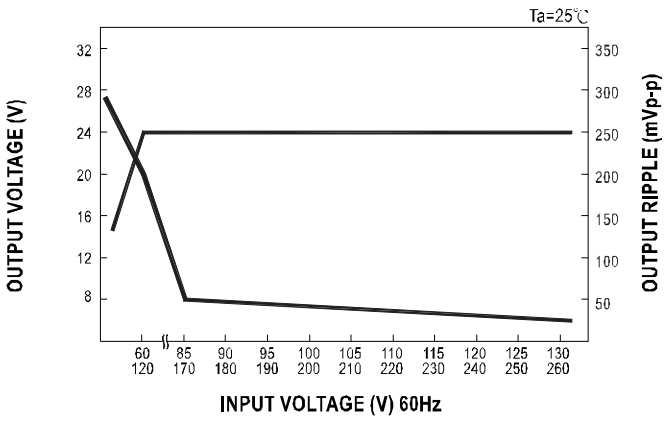
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V
2	AC/N	5	DC OUTPUT +V
3	FG ⏚		

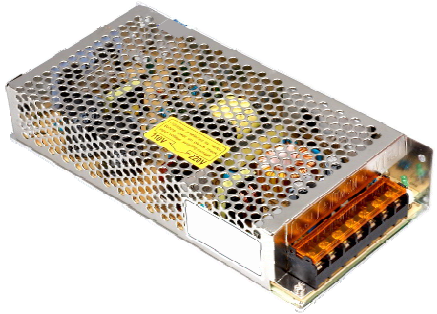
■ Output Derating



■ Static Characteristics (24V)



NIETZ 100W Single Output Switching Power Supply S-100 series



■ Features :

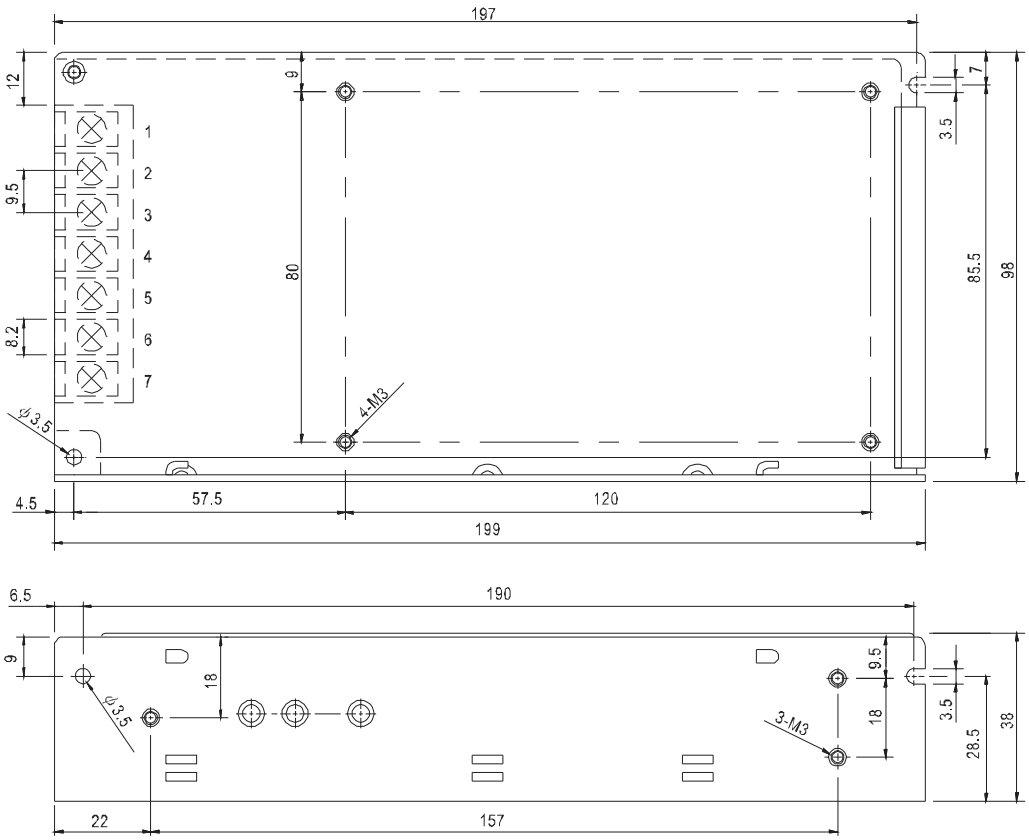
- AC input range selectable by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 25KHz
- Low cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		S-100-3	S-100-5	S-100-7.5	S-100-10	S-100-12	S-100-15	S-100-18	S-100-24	S-100-27	S-100-48
OUTPUT	DC VOLTAGE	3V	5V	7.5V	10V	12V	15V	18V	24V	27V	48V
	RATED CURRENT	20A	20A	13.6A	10A	8.5A	6.7A	5.6A	4.5A	3.7A	2A
	CURRENT RANGE	0 ~ 20A	0 ~ 20A	0 ~ 13.6A	0 ~ 10A	0 ~ 8.5A	0 ~ 6.7A	0 ~ 5.6A	0 ~ 4.5A	0 ~ 3.7A	0 ~ 2A
	RATED POWER	60W	100W	102W	100W	102W	100.5W	100.8W	108W	99.9W	96W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	2.85 ~ 3.3V	4.75 ~ 5.5V	6.75 ~ 8.25V	9 ~ 11V	10.8 ~ 13.2V	13.5 ~ 16.5V	16.2 ~ 19.8V	21.6 ~ 26.4V	26 ~ 32V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	SETUP, RISE, HOLD TIME	200ms, 80ms, 20ms at full load									
INPUT	VOLTAGE RANGE	85 ~ 132VAC/180 ~ 264VAC selected by switch 255 ~ 370VDC									
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY (Typ.)	70%	78%	80%	80%	81%	81%	82%	84%	84%	84%
	AC CURRENT	2.4A/115VAC 1.2A/230VAC									
	INRUSH CURRENT (max.)	COLD START 30A/115VAC 60A/230VAC									
	LEAKAGE CURRENT	<1mA / 240VAC									
PROTECTION	OVER LOAD	105 ~ 150% rated output power (150 ~ 200% rated output power for S-100-7.5 only)									
		Protection type : Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)									
	WORKING HUMIDITY	20 ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH									
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)									
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes									
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012									
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC									
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC									
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B									
OTHERS	MTBF	322.4K hrs min. MIL-HDBK-217F (25℃)									
	DIMENSION	199*98*38mm (L*W*H)									
	PACKING	0.62Kg; 20pcs/13.6Kg/0.72CUFT									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.										

■ Mechanical Specification

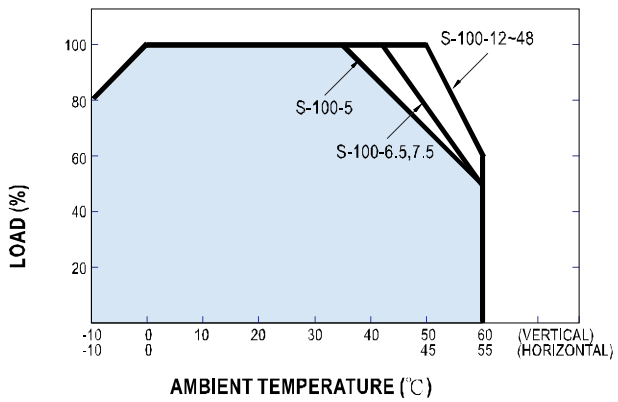
Case No. 902 Unit:mm



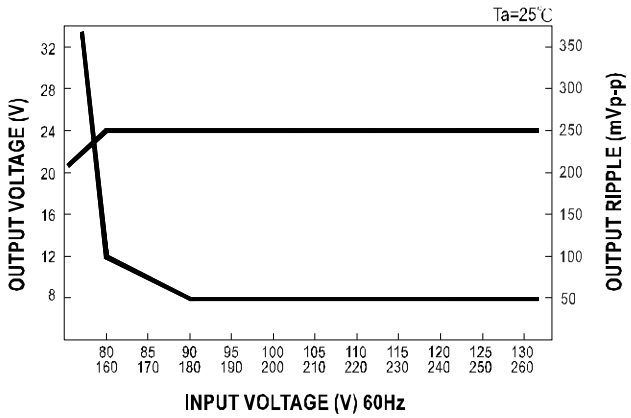
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

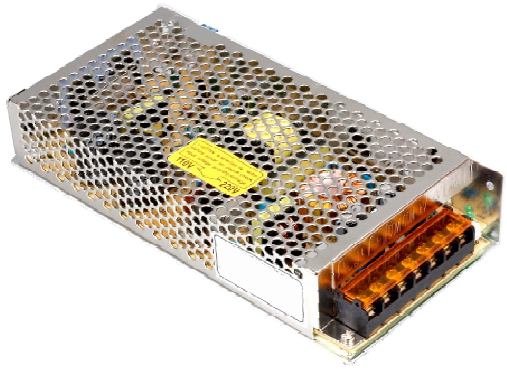
■ Derating Curve



■ Static Characteristics (24V)



NIETZ 100W Single Output Switching Power Supply S-100F series



■ Features :

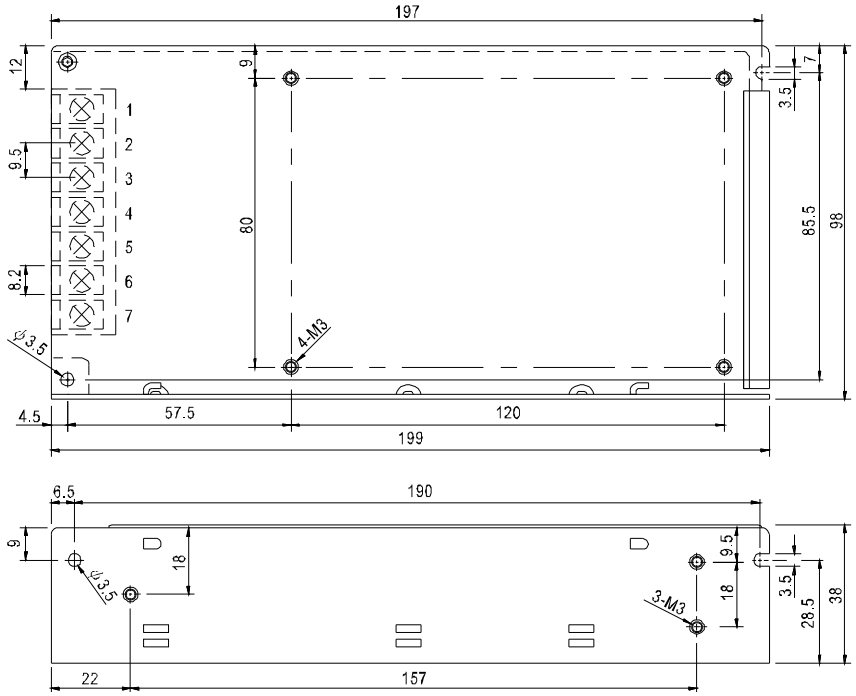
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 83KHz

SPECIFICATION

MODEL		S-100F-5	S-100F-7.5	S-100F-12	S-100F-15	S-100F-24	S-100F-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	15V	24V	48V
	RATED CURRENT	20A	13.5A	8.5A	6.7A	4.5A	2.2A
	CURRENT RANGE	0 ~ 20A	0 ~ 13.5A	0 ~ 8.5A	0 ~ 6.7A	0 ~ 4.5A	0 ~ 2.2A
	RATED POWER	100W	101.25W	102W	100.5W	108W	105.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	125mVp-p	125mVp-p	125mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	6.75 ~ 8.25V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 30ms at full load					
	HOLD UP TIME (Typ.)	20ms at full load					
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by jumper or switch 248 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	76%	78%	80%	81%	83%	84%
	AC CURRENT (Typ.)	3.15A/115VAC 1.5A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC					
	LEAKAGE CURRENT	<1mA / 240VAC					
PROTECTION	OVERLOAD	105 ~ 150% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	8.63 ~ 10.13V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	CSA60950-1 (for 24V only), UL1012, UL60950-1, TUV EN60950-1, CCC GB4943 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A					
OTHERS	MTBF	314.9K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	199*98*38mm (L*W*H)					
	PACKING	0.65Kg; 20pcs/14.2Kg/0.8CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.						

■ Mechanical Specification

Case No. 902 Unit:mm

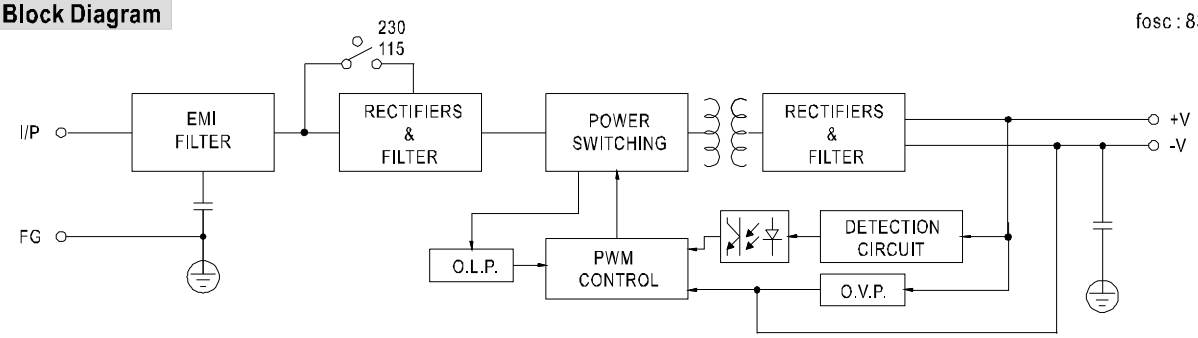


Terminal Pin No. Assignment

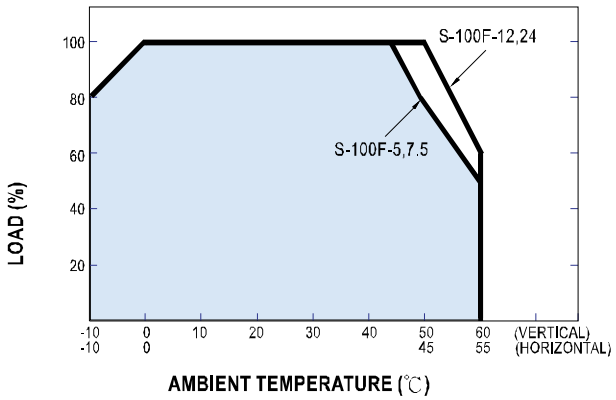
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

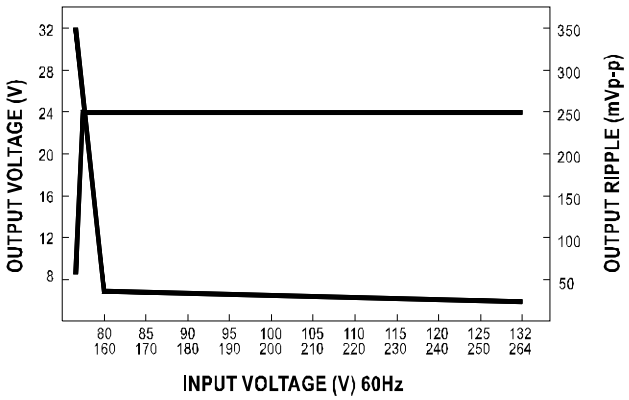
fosc : 83KHz



■ Derating Curve



■ Static Characteristics (24V)



NIETZ 120W Single Output Switching Power Supply **S-120 series**

■ Features :

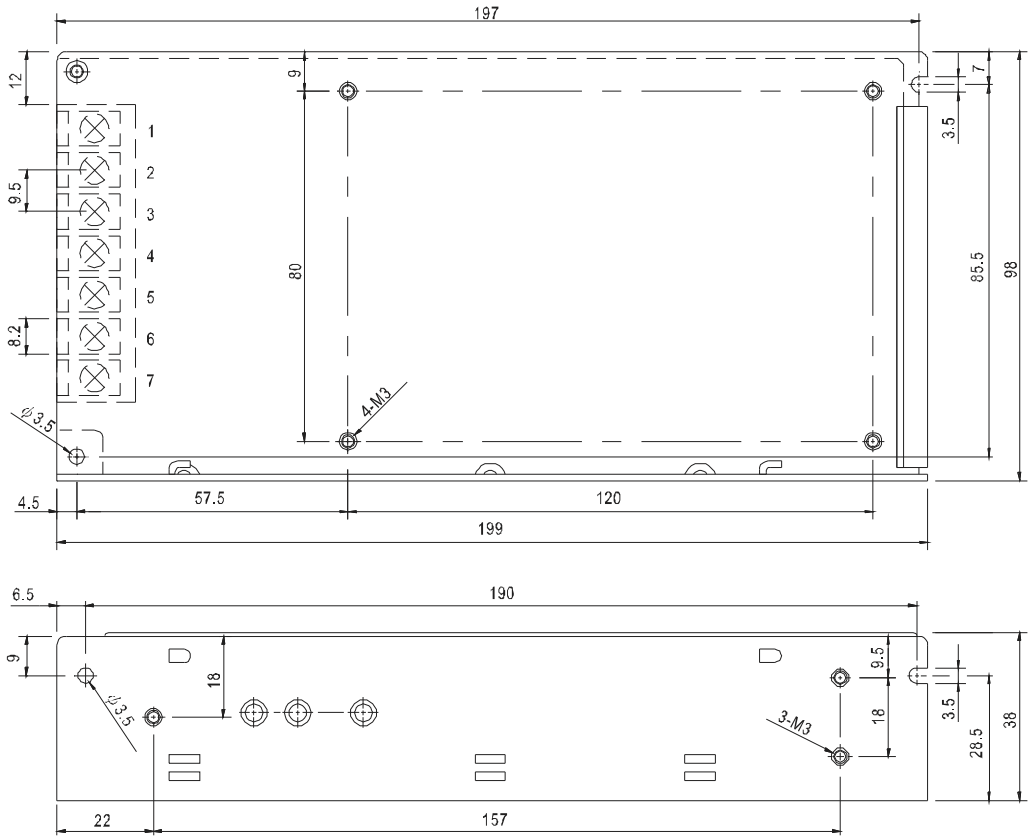
- AC input range selectable by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 25KHz
- Low cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		S-120-3	S-120-5	S-120-7.5	S-120-10	S-120-12	S-120-15	S-120-18	S-120-24	S-120-27	S-120-48
OUTPUT	DC VOLTAGE	3V	5V	7.5V	10V	12V	15V	18V	24V	27V	48V
	RATED CURRENT	22A	22A	16A	12A	10A	8A	6.7A	5A	4.5A	2.5A
	CURRENT RANGE	0~22A	0~22A	0~16A	0~12A	0~10A	0~8A	0~6.7A	0~5A	0~4.5A	0~2.5A
	RATED POWER	66W	110W	120W	120W	120W	120W	120.6W	120W	121.5W	120W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	2.85 ~ 3.3V	4.75 ~ 5.5V	6.75 ~ 8.25V	9 ~ 11V	10.8 ~ 13.2V	13.5 ~ 16.5V	16.2 ~ 19.8V	21.6 ~ 26.4V	26 ~ 32V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	SETUP, RISE, HOLD TIME	200ms, 80ms, 20ms at full load									
INPUT	VOLTAGE RANGE	85 ~ 132VAC/180 ~ 264VAC selected by switch 255 ~ 370VDC									
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY (Typ.)	70%	78%	80%	80%	81%	81%	82%	84%	84%	84%
	AC CURRENT	2.6A/115V 1.3A/230VAC									
	INRUSH CURRENT (max.)	COLD START 30A/115VAC 60A/230VAC									
	LEAKAGE CURRENT	<1mA / 240VAC									
PROTECTION	OVER LOAD	105 ~ 150% rated output power (150 ~ 200% rated output power for S-100-7.5 only)									
		Protection type : Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)									
	WORKING HUMIDITY	20 ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH									
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)									
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes									
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012									
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC									
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC									
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class B									
OTHERS	MTBF	322.4K hrs min. MIL-HDBK-217F (25℃)									
	DIMENSION	199*98*38mm (L*W*H)									
	PACKING	0.62Kg; 20pcs/13.6Kg/0.72CUFT									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.										

■ Mechanical Specification

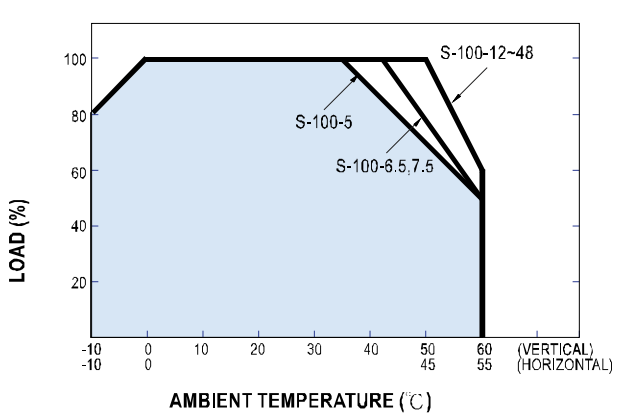
Case No. 902 Unit:mm



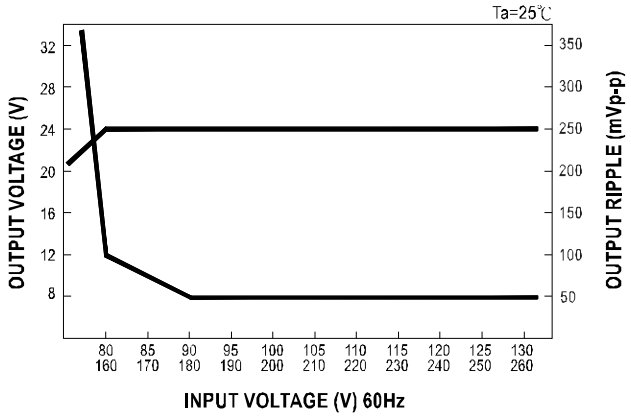
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

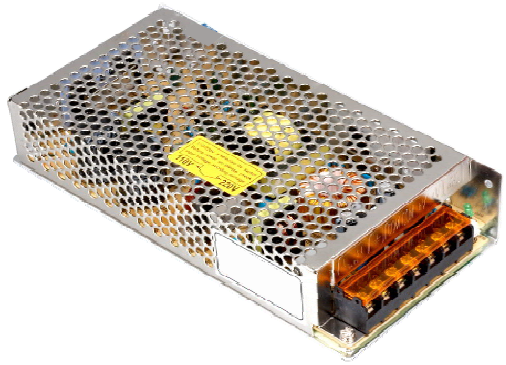
■ Derating Curve



■ Static Characteristics (24V)



NIETZ 145W Single Output Switching Power Supply S-145 series



■ Features :

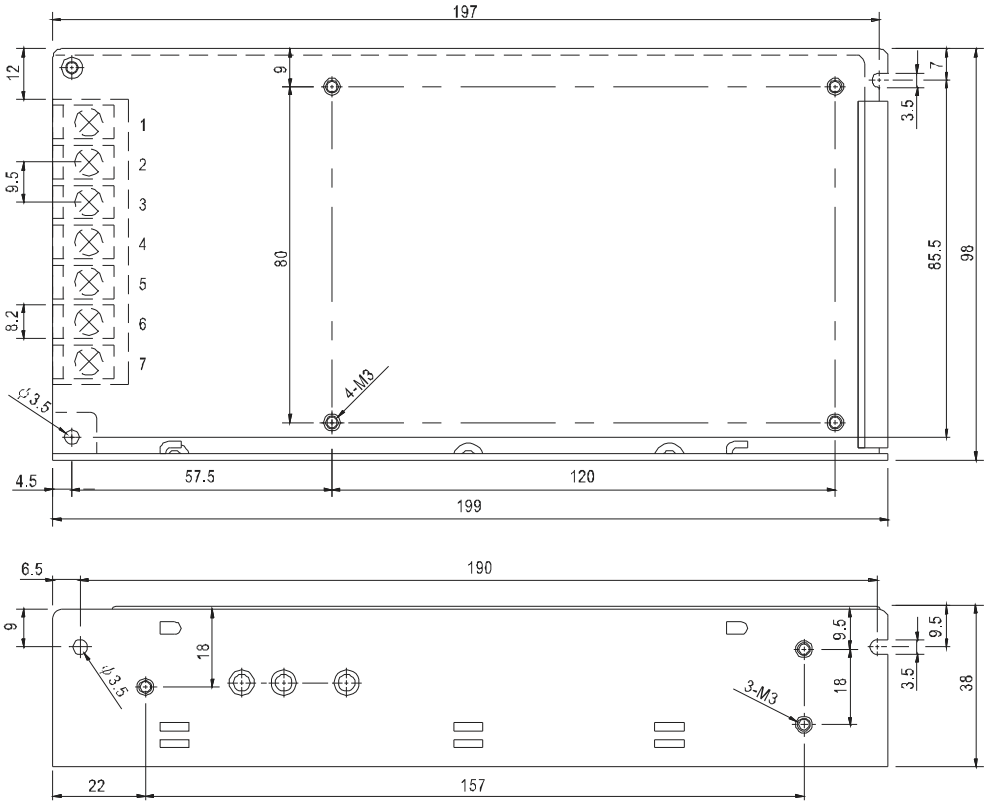
- AC input range selectable by switch
- Protections:Short circuit/Over load/Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 25KHz
- LED indicator for power on
- Made in China for low cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		S-145-5	S-145-7.5	S-145-12	S-145-15	S-145-24
OUTPUT	DC VOLTAGE	5V	7.5V	12V	15V	24V
	RATED CURRENT	25A	18A	12A	9.6A	6A
	CURRENT RANGE	0 ~ 25A(30A max.)	0 ~ 18A(21A max.)	0 ~ 12A(14A max.)	0 ~ 9.6A(11A max.)	0 ~ 6A(7A max.)
	RATED POWER	125W	135W	144W	144W	144W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	6 ~ 8.3V	10.6 ~ 13.2V	13.2 ~ 16.5V	21 ~ 28V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	100ms, 50ms, 20ms at full load				
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by switch				
	FREQUENCY RANGE	47 ~ 63Hz				
	EFFICIENCY (Typ.)	78%	80.5%	80.5%	81%	83.5%
	AC CURRENT	3.2A/115VAC 1.6A/230VAC				
	INRUSH CURRENT (max.)	COLD START 35A				
	LEAKAGE CURRENT	<3.5mA / 240VAC				
PROTECTION	OVER LOAD	125 ~ 165% rated output power				
		Protection type : Shut down o/p voltage, re-power on to recover				
	OVER VOLTAGE	5.6 ~ 6.8V	8.6 ~ 10V	13.8 ~ 16.2V	17.3 ~ 20.3V	29 ~ 32V
		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012				
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC				
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B				
	EMS IMMUNITY	Compliance to IEC801-2,3,4 Light industry level, criteria A				
OTHERS	MTBF	286.7K hrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	199*98*38mm (L*W*H)				
	PACKING	0.71Kg; 30pcs/22.5Kg/1.22CUFT				
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. C3,4,22,41,63,140,141 must be removed. 5. Refer to output derating curve us input voltage.					

■ Mechanical Specification

Case No. 902 Unit:mm

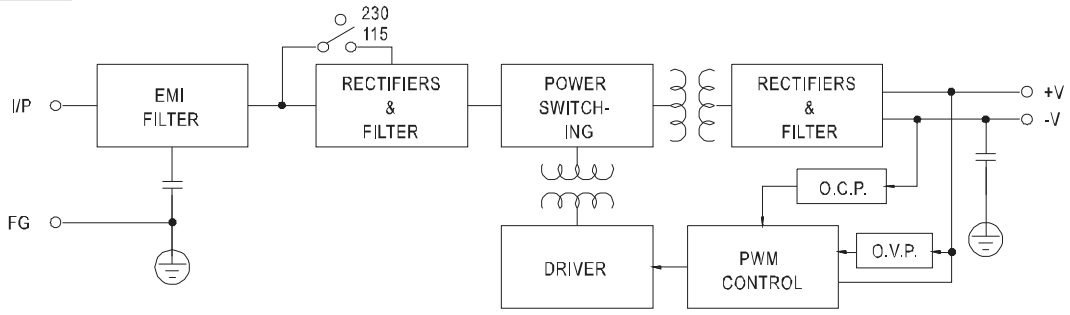


Terminal Pin. No Assignment

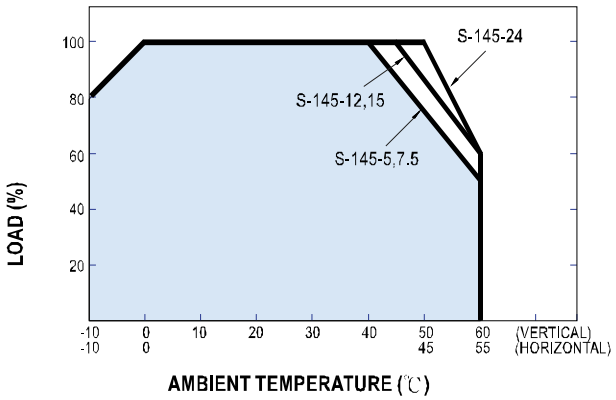
Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚
4,5	DC OUTPUT -V
6,7	DC OUTPUT +V

■ Block Diagram

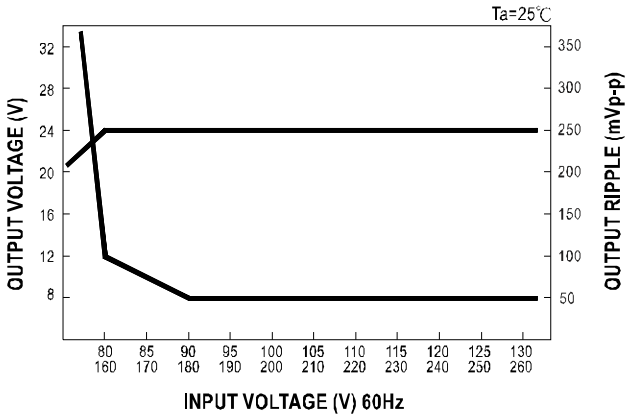
fosc : 25KHz



■ Derating Curve



■ Static Characteristics (24V)



NIETZ 150W Single Output Switching Power Supply S-150 series

■ Features :

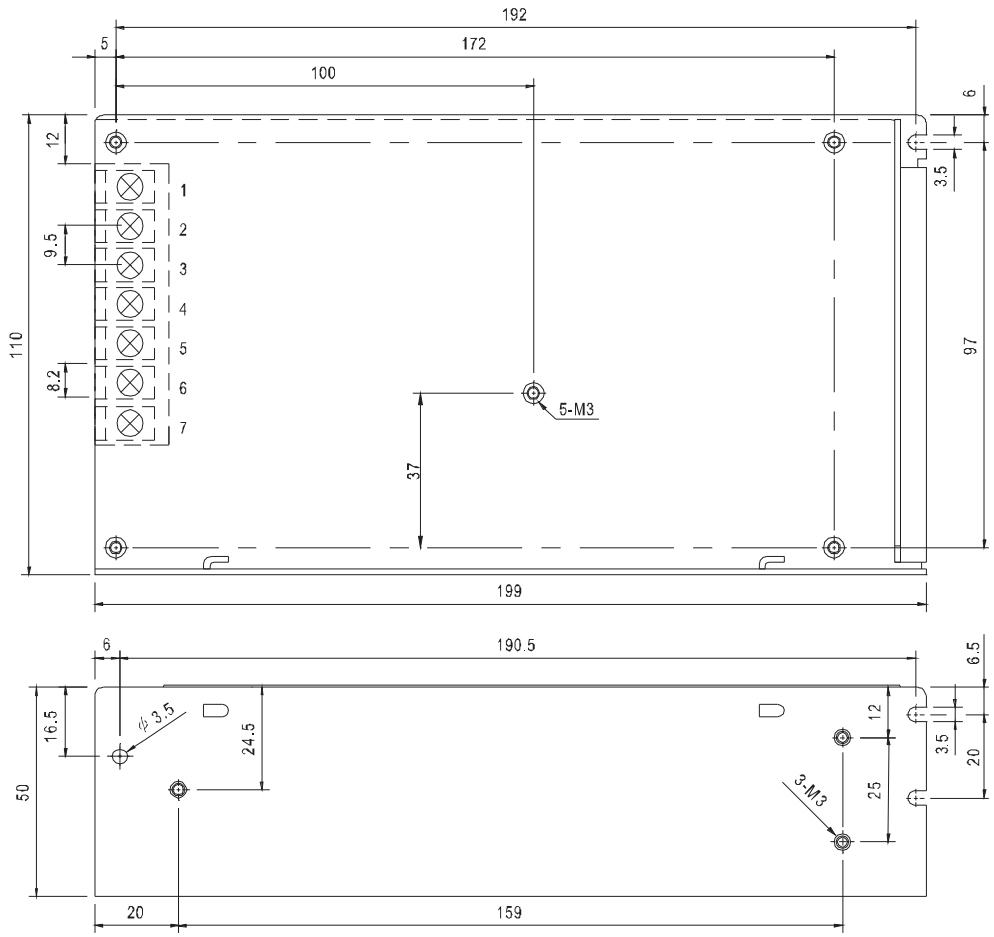
- AC input range selectable by switch
- Protections:Short circuit/Over load/Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 25KHz

SPECIFICATION

MODEL		S-150-5	S-150-7.5	S-150-9	S-150-12	S-150-13.5	S-150-15	S-150-24	S-150-27	S-150-48
OUTPUT	DC VOLTAGE	5V	7.5V	9V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	30A	20A	16.7A	12.5A	11.2A	10A	6.5A	5.6A	3.2A
	CURRENT RANGE	0 ~ 30A	0 ~ 20A	0 ~ 16.7A	0 ~ 12.5A	0 ~ 11.2A	0 ~ 10A	0 ~ 6.5A	0 ~ 5.6A	0 ~ 3.2A
	RATED POWER	150W	150W	150.3W	150W	151.2W	150W	156W	151.2W	153.6W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	180mVp-p	180mVp-p	180mVp-p	180mVp-p	240mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5V	6 ~ 8.3V	8 ~ 10.4V	10.6 ~ 13.2V	12 ~ 15V	13.5 ~ 16.5V	21 ~ 28V	24 ~ 30V	43 ~ 53V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	SETUP, RISE, HOLD TIME	100ms, 50ms, 20ms at full load								
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by switch 248 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY (Typ.)	78%	80%	80%	82%	83%	84%	85%	86%	87%
	AC CURRENT	3.2A/115VAC 1.6A/230VAC								
	INRUSH CURRENT (max.)	COLD START 35A								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVER LOAD	105 ~ 150% rated output power								
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER VOLTAGE	5.75 ~ 6.75V	8.63 ~ 10.13V	10.35 ~ 12.2V	13.8 ~ 16.2V	15.53 ~ 18.2V	17.25 ~ 20.3V	30 ~ 34.8V	31.1 ~ 36.45V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, UL60950-1, TUV EN60950-1 Approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B								
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3								
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A								
OTHERS	MTBF	286.7K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	199*110*50mm (L*W*H)								
	PACKING	0.8Kg; 16pcs/13.8Kg/0.95CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.									

■ Mechanical Specification

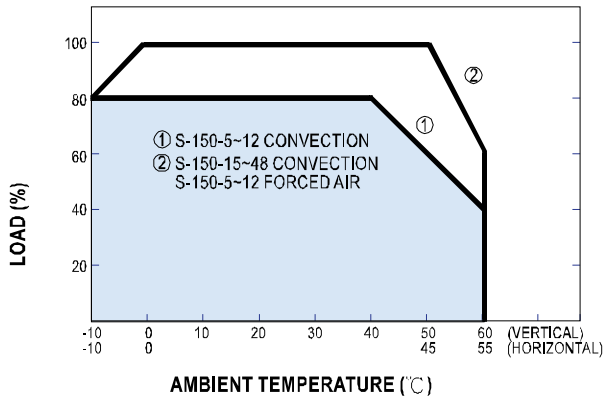
Case No. 906 Unit:mm



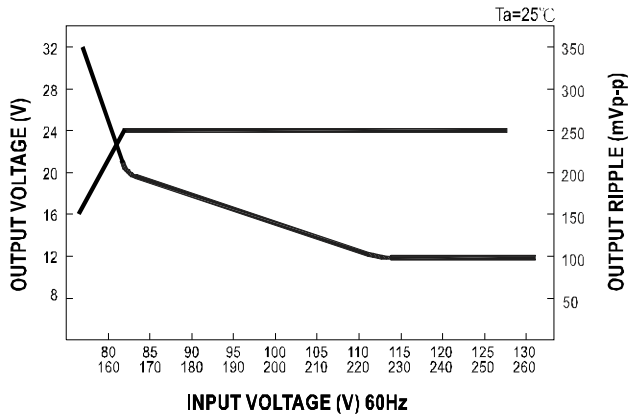
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

■ Derating Curve



■ Static Characteristics (24V)



NIETZ 200W Single Output Switching Power Supply S-201 series

■ Features :

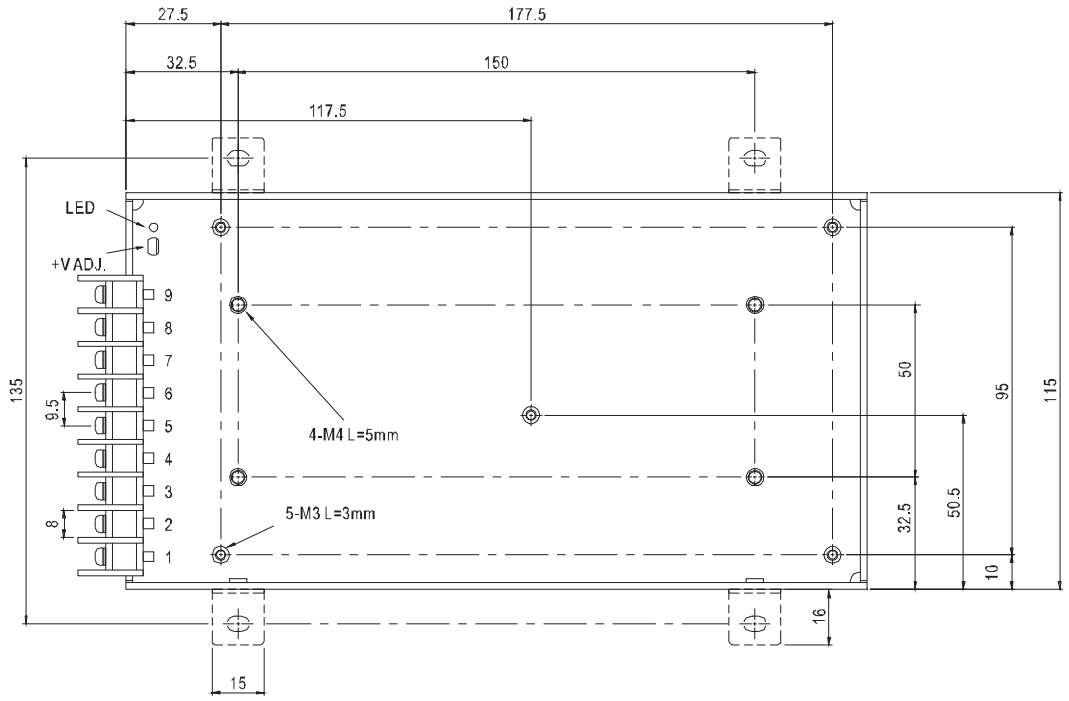
- AC input range selectable by switch
- Protections:Short circuit/Over load/Over temperature
- Cooling by free air convection
- 100% full load burn-in test
- Compact size, light weight
- Fixed switching frequency at 25KHz
- Low cost
- High reliability
- 1 year warranty

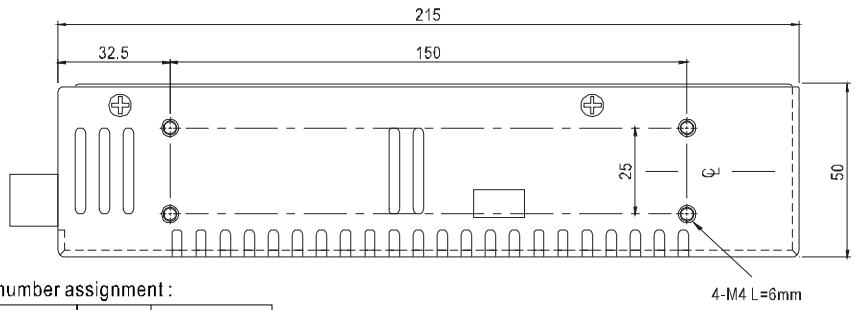
SPECIFICATION

MODEL		S-201-5	S-201-7.5	S-201-12	S-201-13.5	S-201-15	S-201-24	S-201-27	S-201-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	40A	26.5A	16.5A	14.7A	13A	8.3A	7.4A	4.2A
	CURRENT RANGE	0 ~ 40A	0 ~ 26.50A	0 ~ 16.5A	0 ~ 14.7A	0 ~ 13A	0 ~ 8.3A	0 ~ 7.4A	0 ~ 4.2A
	RATED POWER	200W	198.75W	198W	198.45W	198W	199.2W	199.8W	201.6W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 20ms at full load							
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	74%	79%	80%	80%	81%	83%	83%	84%
	AC CURRENT	4.5A/115VAC 2.5A/230VAC							
	INRUSH CURRENT (max.)	50A/115VAC 50A/230VAC							
	LEAKAGE CURRENT	<3.5mA / 240VAC							
PROTECTION	OVER LOAD	105 ~ 135% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	≧90℃(RTH3) Detect on inside ambient temperature							
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-10 ~ +50℃ (Refer to output load derating curve)							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1950							
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC							
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class A							
OTHERS	MTBF	271.9K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	0.93Kg; 12pcs/12Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

■ Mechanical Specification

Case No. 912 Unit:mm

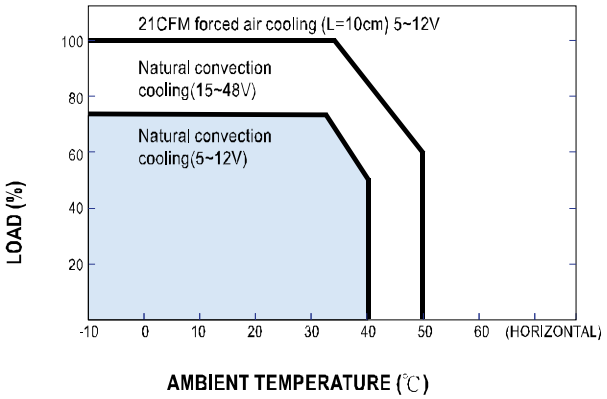




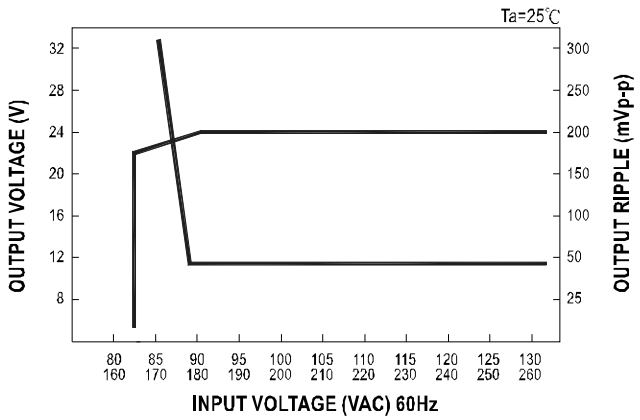
Terminal pin number assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

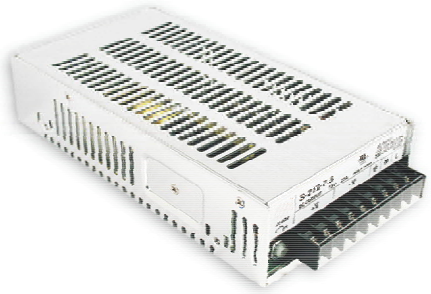
■ Derating Curve



■ Static Characteristics (24V)



NIETZ 210W Single Output Switching Power Supply S-210 series



■ Features :

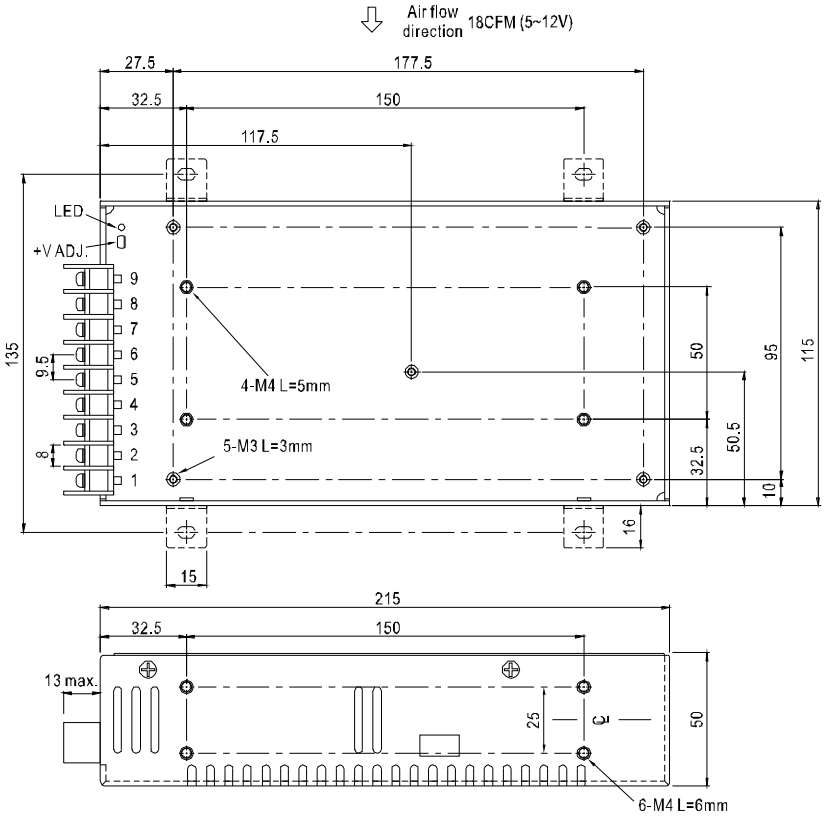
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 100% full load burn-in test
- Fixed switching frequency at 90KHz
- Low cost
- High reliability

SPECIFICATION

MODEL		S-210-5	S-210-7.5	S-210-12	S-210-13.5	S-210-15	S-210-24	S-210-27	S-210-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	40A	27A	17A	15A	14A	8.8A	7.8A	4.4A
	CURRENT RANGE	0 ~ 40A	0 ~ 27A	0 ~ 17A	0 ~ 15A	0 ~ 14A	0 ~ 8.8A	0 ~ 7.8A	0 ~ 4.4A
	RATED POWER	200W	202.5W	204W	202.5W	210W	211.2W	210.6W	211.2W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	100mVp-p	120mVp-p	120mVp-p	120mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.7V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 29V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 20ms/230VAC 1000ms, 20ms/115VAC at full load							
	HOLD UP TIME (Typ.)	20ms/230VAC 20ms/115VAC at full load							
INPUT	VOLTAGE RANGE	88 ~ 132VAC / 176~264VAC by switch 248 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	79%	82%	83%	84%	85%	87%	87%	87%
	AC CURRENT (Typ.)	4.2A/115VAC 2.5A/230VAC							
	INRUSH CURRENT (Typ.)	35A/115VAC 50A/230VAC							
	LEAKAGE CURRENT	<3.5mA / 240VAC							
PROTECTION	OVERLOAD	105 ~ 150% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	31.05 ~ 36.45V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER TEMPERATURE	RTH1＞85℃							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-20 ~ +50℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
SAFETY	SAFETY STANDARDS	UL60950-1 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH							
OTHERS	MTBF	244.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	0.95Kg; 12pcs/12.4Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

■ Mechanical Specification

Case No. 912E Unit:mm

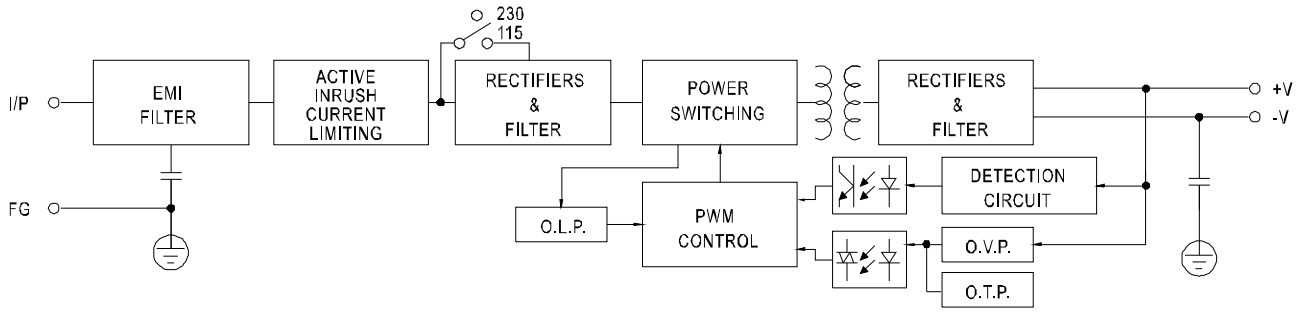


Terminal Pin No. Assignment :

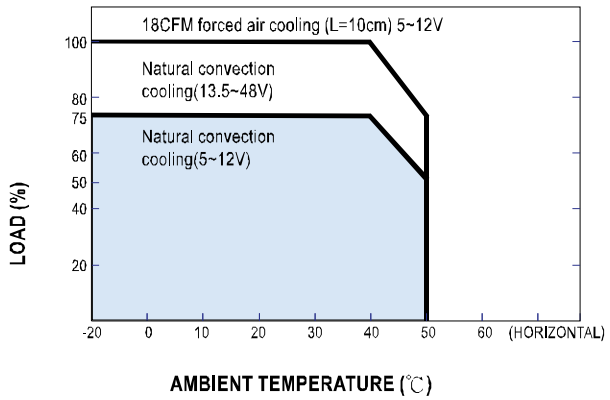
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

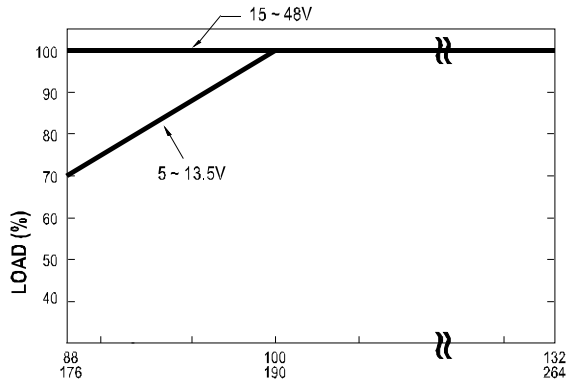
fosc : 90KHz



■ Derating Curve



■ Static Characteristics



NIETZ 250W Single Output Switching Power Supply S-250 series

■ Features :

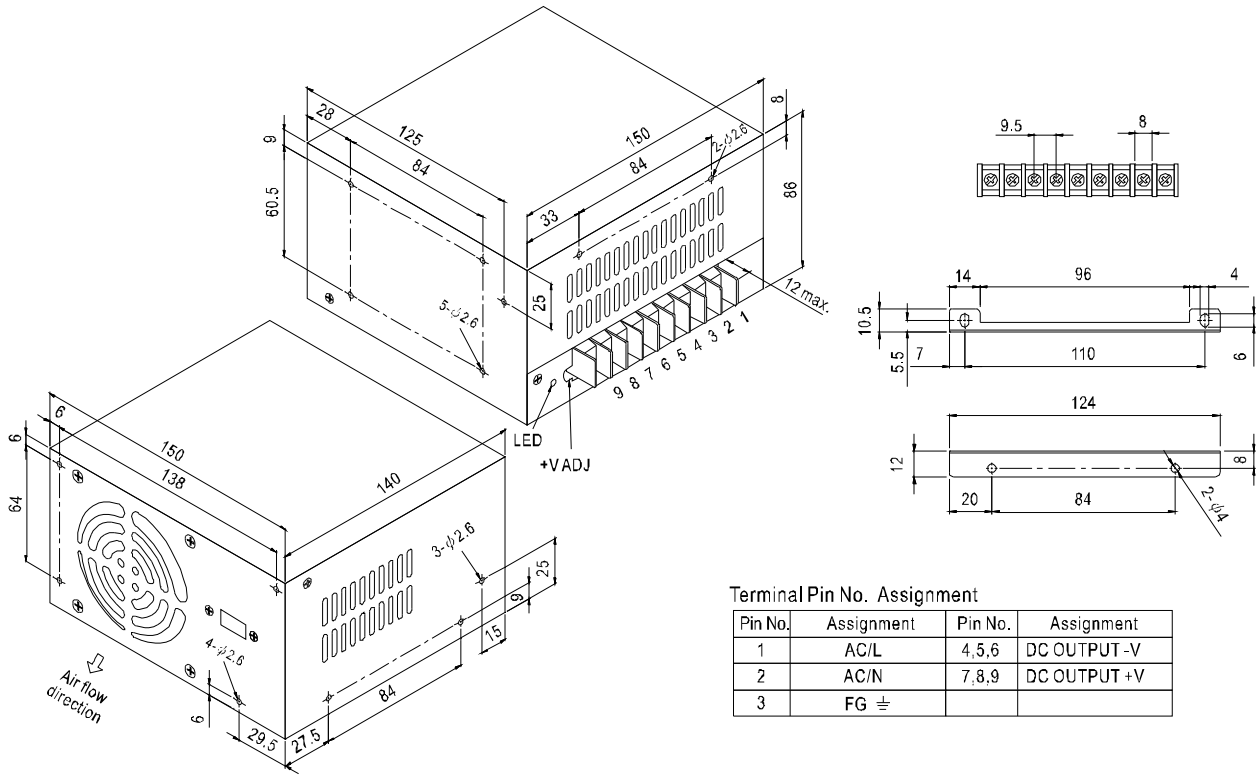
- AC input range selected by switch
- Protections: Short circuit / Overload / Over voltage
- Forced air cooling by built-in DC fan
- 100% full load burn-in test
- Fixed switching frequency at 60KHz
- Low cost
- High reliability

SPECIFICATION

MODEL		S-250-5	S-250-12	S-250-15	S-250-24	S-250-27	S-250-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	27V	48V
	RATED CURRENT	40A	18A	15A	10A	9A	5.2A
	CURRENT RANGE	0 ~ 40A	0 ~ 18A	0 ~ 15A	0 ~ 10A	0 ~ 9A	0 ~ 5.2A
	RATED POWER	200W	216W	225W	240W	243W	249.6W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~5.5V	10.8 ~13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	24.3 ~ 29.7V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	800ms, 50ms at full load					
	HOLD TIME (Typ.)	19ms at full load					
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 176 ~ 264VAC Selected by switch 248~370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	74%	79%	80%	81.5%	82%	82%
	AC CURRENT (Typ.)	4.8A/115VAC 2.8A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 45A/230VAC					
	LEAKAGE CURRENT	<2mA / 240VAC					
PROTECTION	OVER LOAD	105 ~ 135% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	31.05 ~ 36.45V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY	SAFETY STANDARDS	UL60950-1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
OTHERS	MTBF	238.9K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	150*140*86mm (L*W*H)					
	PACKING	1.15Kg; 8pcs/10.2Kg/0.97CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.						

■ Mechanical Specification

Case No. 907C Unit:mm

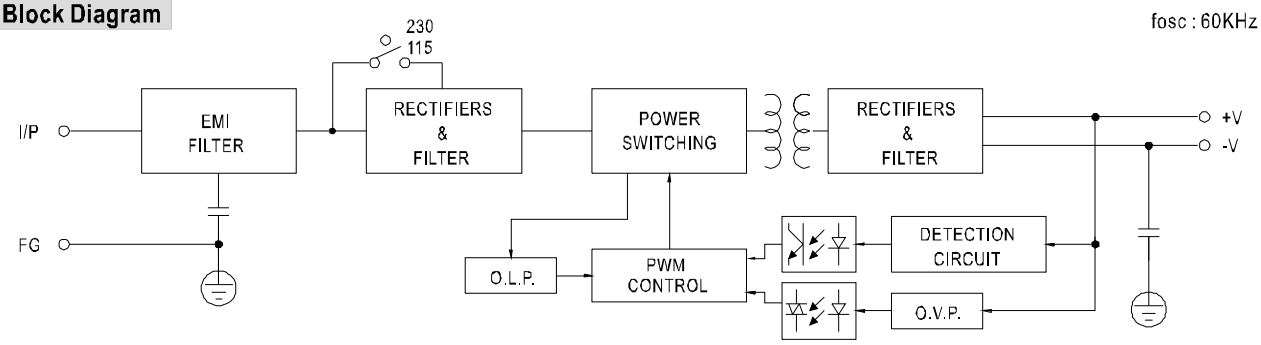


Terminal Pin No. Assignment

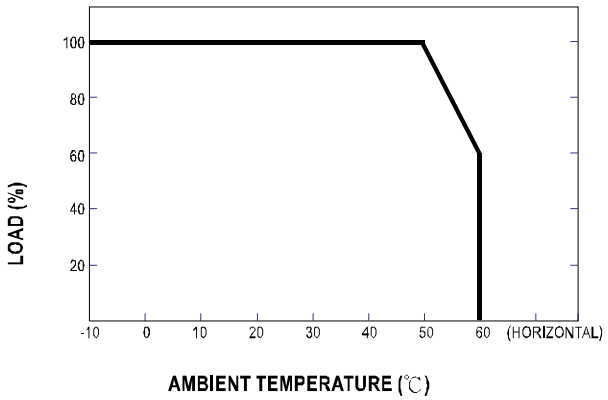
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5,6	DC OUTPUT -V
2	AC/N	7,8,9	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

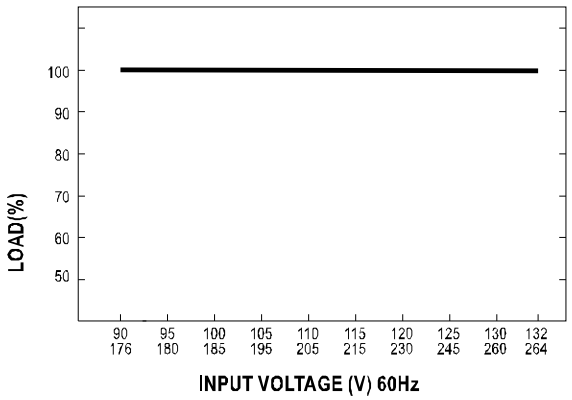
fosc : 60KHz



■ Derating Curve



■ Static Characteristics



NIETZ 250W Single Output Switching Power Supply **S-250 series**

■ Features :

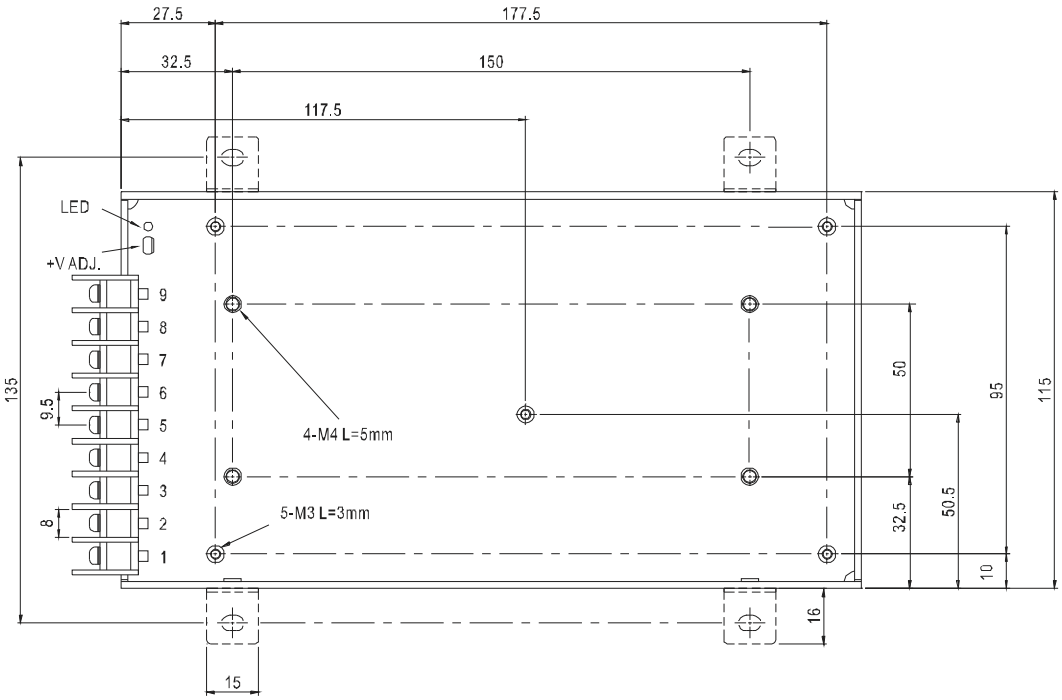
- AC input range selectable by switch
- Protections:Short circuit/Over load/Over temperature
- Cooling by free air convection
- 100% full load burn-in test
- Compact size, light weight
- Fixed switching frequency at 25KHz
- Low cost
- High reliability
- 1 year warranty

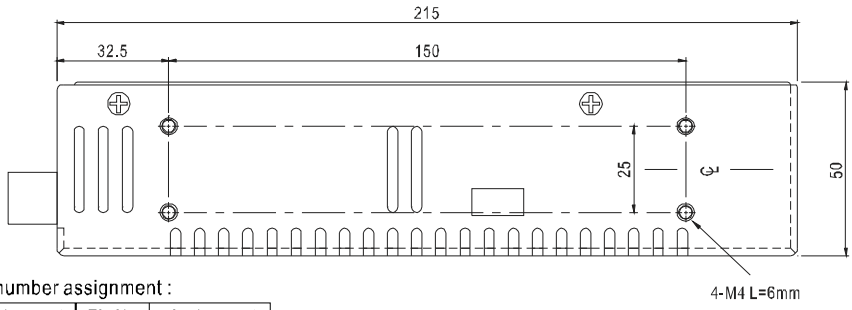
SPECIFICATION

MODEL		S-250-5	S-250-7.5	S-250-12	S-250-13.5	S-250-15	S-250-24	S-250-27	S-250-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	40A	30A	20A	17.8A	16A	10A	8.9A	5A
	CURRENT RANGE	0~40A	0~225A	0~20A	0~17.8A	0~16A	0~10A	0~8.9A	0~5A
	RATED POWER	200W	200W	240W	240.3W	240W	240W	240.3W	240W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 20ms at full load							
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	74%	79%	80%	80%	81%	83%	83%	84%
	AC CURRENT	6A/115VAC 3A/230VAC							
	INRUSH CURRENT (max.)	50A/115VAC 50A/230VAC							
	LEAKAGE CURRENT	<3.5mA / 240VAC							
PROTECTION	OVER LOAD	105 ~ 135% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	＞90℃(RTH3) Detect on inside ambient temperature							
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-10 ~ +50℃ (Refer to output load derating curve)							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1950							
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC							
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class A							
OTHERS	MTBF	271.9K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	0.93Kg; 12pcs/12Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

■ Mechanical Specification

Case No. 912 Unit:mm

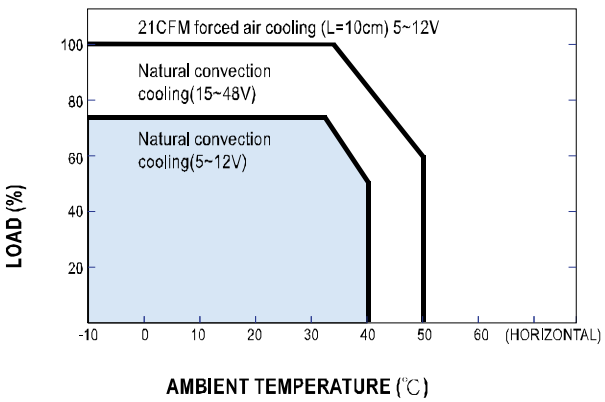




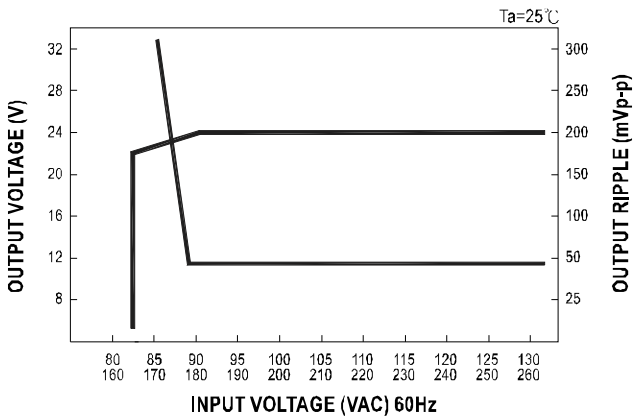
Terminal pin number assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Derating Curve



■ Static Characteristics (24V)



NIETZ 320W Single Output Switching Power Supply S-320 series

■ Features :

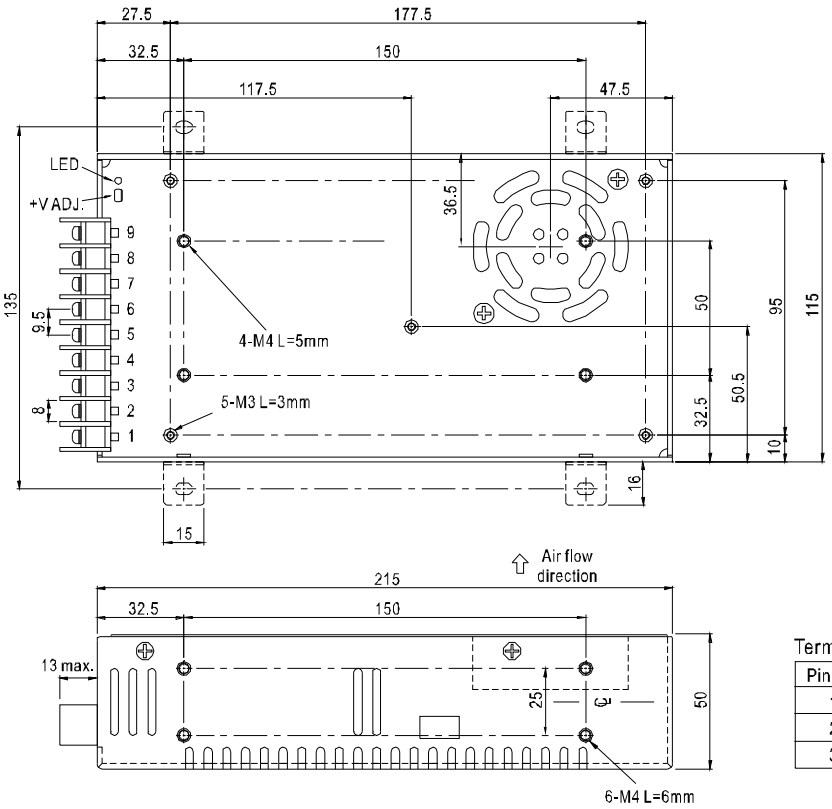
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- Cooling Fan ON-OFF auto control
- 100% full load burn-in test
- Fixed switching frequency at 90KHz

SPECIFICATION

MODEL		S-320-5	S-320-7.5	S-320-12	S-320-13.5	S-320-15	S-320-24	S-320-27	S-320-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	50A	36A	25A	22A	20A	12.5A	11A	6.5A
	CURRENT RANGE	0 ~ 50A	0 ~ 36A	0 ~ 25A	0 ~ 22A	0 ~ 20A	0 ~ 12.5A	0 ~ 11A	0 ~ 6.5A
	RATED POWER	250W	270W	300W	297W	300W	300W	297W	312W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.7V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	2000ms, 20ms at full load							
	HOLD UP TIME (Typ.)	24ms at full load							
INPUT	VOLTAGE RANGE	88 ~ 132VAC / 176~264VAC by switch 248 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY(Typ.)	77%	80%	82%	83%	84%	86%	86%	87%
	AC CURRENT (Typ.)	6A/115VAC 3.5A/230VAC							
	INRUSH CURRENT (Typ.)	18A/115VAC 36A/230VAC							
	LEAKAGE CURRENT	<3.5mA / 240VAC							
PROTECTION	OVERLOAD	105 ~ 135% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	57.6 ~ 67.2V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	FAN CONTROL O.T.P.	RTH1＞65℃ FAN ON, ＜55℃ FAN OFF, ＞70℃(5 ~ 15V)							
		RTH1≧70℃ FAN ON, ≦65℃ FAN OFF, ≧80℃(24 ~ 48V)							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
SAFETY	SAFETY STANDARDS	UL60950-1 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH							
OTHERS	MTBF	188.7K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	1.08Kg; 12pcs/13.8Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

■ Mechanical Specification

Case No. 912A Unit:mm

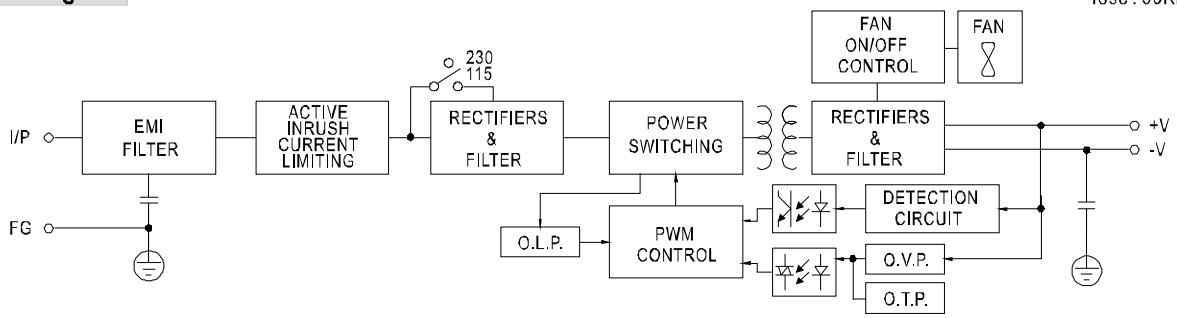


Terminal Pin No. Assignment

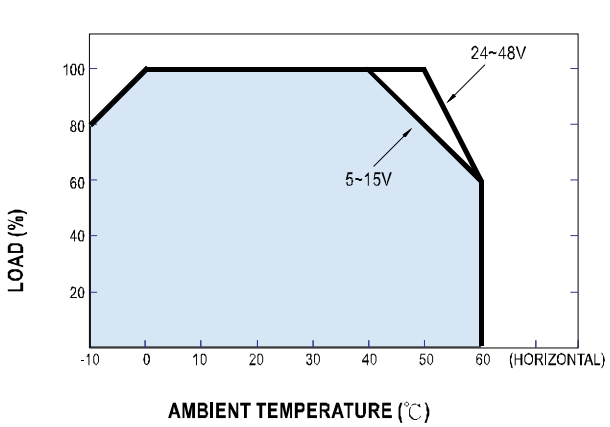
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

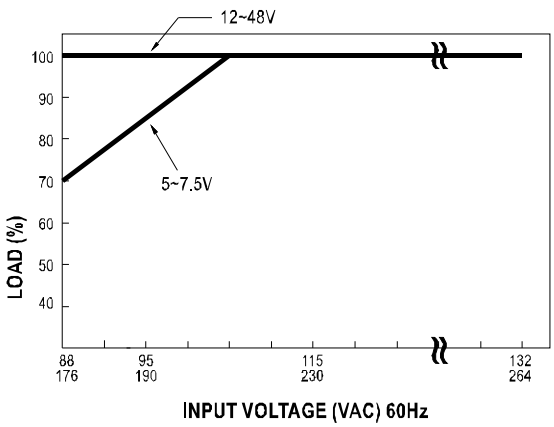
fosc : 90KHz



■ Derating Curve



■ Static Characteristics



NIETZ 350W Single Output Switching Power Supply S-350 series

■ Features :

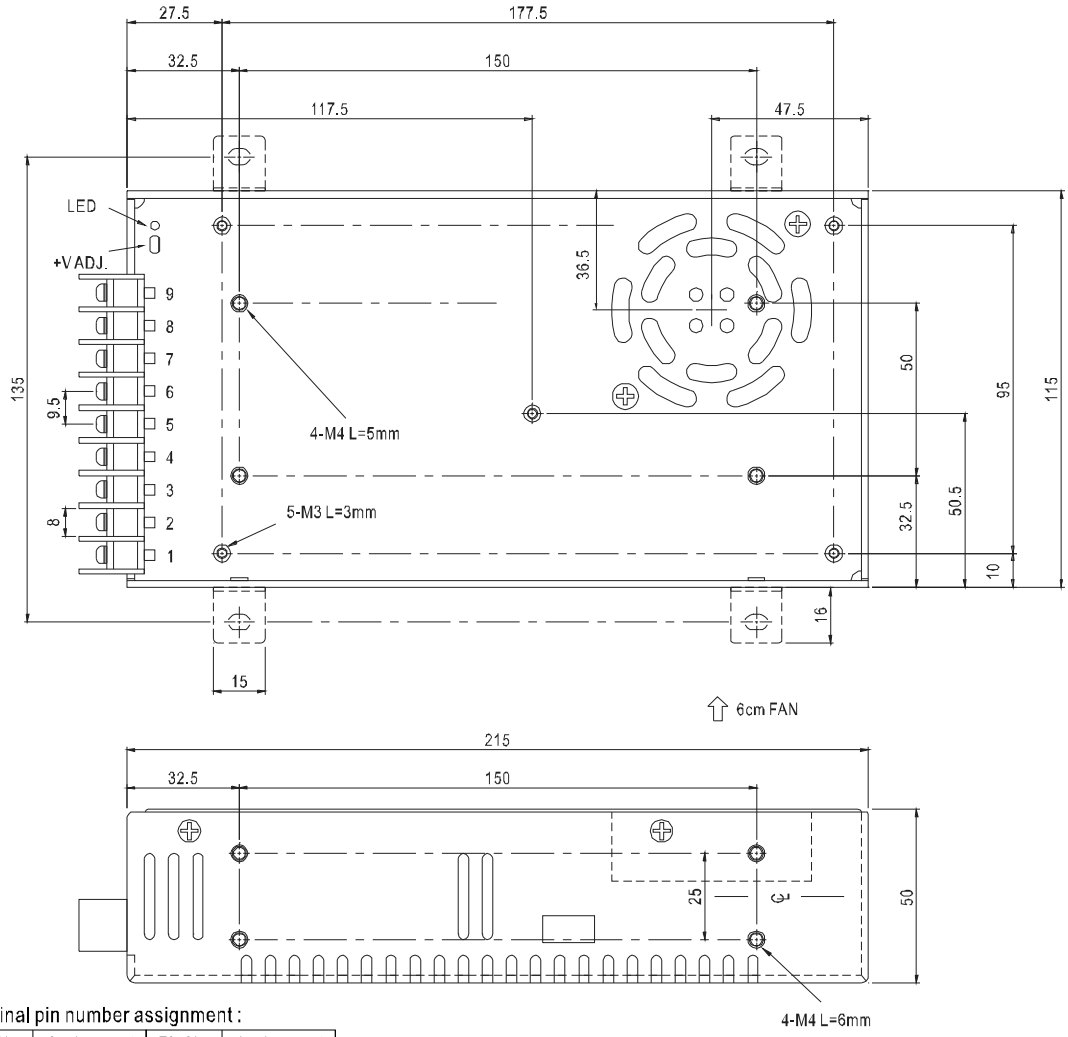
- Universal AC input / Full range
- Protections:Short circuit/Over load/Over voltage
- Forced air cooling by built-in DC fan
- PWM control and regulated
- Built-in cooling Fan ON-OFF control
- 100% full load burn-in test
- Fixed switching frequency at 25KHz
- Low cost
- 1 year warranty

SPECIFICATION

MODEL		S-350-5	S-350-7.5	S-350-12	S-350-13.5	S-350-15	S-350-24	S-350-27	S-350-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	50A	40A	29A	25.8A	23.2A	14.6A	13A	7.3A
	CURRENT RANGE	0 ~ 50A	0 ~ 40A	0 ~ 29A	0 ~ 25.8A	0 ~ 23.2A	0 ~ 14.6A	0 ~ 13A	0 ~ 7.3A
	RATED POWER	250W	300W	348W	348.3W	348W	350.4W	351W	350.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD TIME	200ms, 50ms, 20ms at full load							
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC							
	FREQUENCY RANGE	47~63Hz							
	EFFICIENCY (Typ.)	73%	76%	74%	79%	78%	81%	82%	83%
	AC CURRENT	6.5A/115VAC 4A/230VAC							
	INRUSH CURRENT (max.)	50A/115VAC 50A/230VAC							
	LEAKAGE CURRENT	<3.5mA / 240VAC							
PROTECTION	OVER LOAD	105~135% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	57.6 ~ 67.2V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
FUNCTION	FAN ON/OFF CONTROL	RTH3≧55℃ FAN ON, ≦45℃ FAN OFF, ≧80℃ output shutdown (5 ~ 7.5V)							
		RTH3＞65℃ FAN ON, ＜55℃ FAN OFF, ＞80℃ output shutdown (12 ~ 15V)							
		RTH3≧70℃ FAN ON, ≦60℃ FAN OFF, ≧85℃ output shutdown (24 ~ 48V)							
ENVIRONMENT	WORKING TEMP.	-10 ~ +50℃ (Refer to output load derating curve)							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC							
OTHERS	MTBF	234.3K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	1.07Kg; 12pcs/13.5Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.								

■ Mechanical Specification

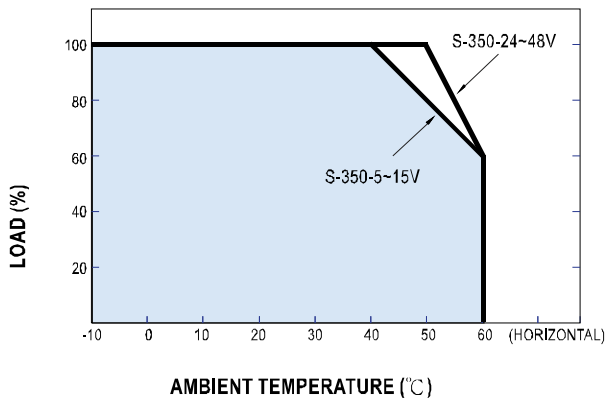
Case No. 912 Unit:mm



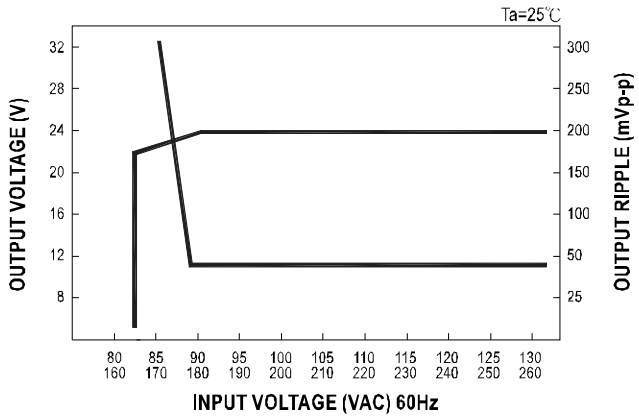
Terminal pin number assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	-V
2	AC/N	7~9	+V
3	FG		

■ Derating Curve



■ Static Characteristics (24V)



400W单组输出开关电源　　S-400系列

■ 特性:

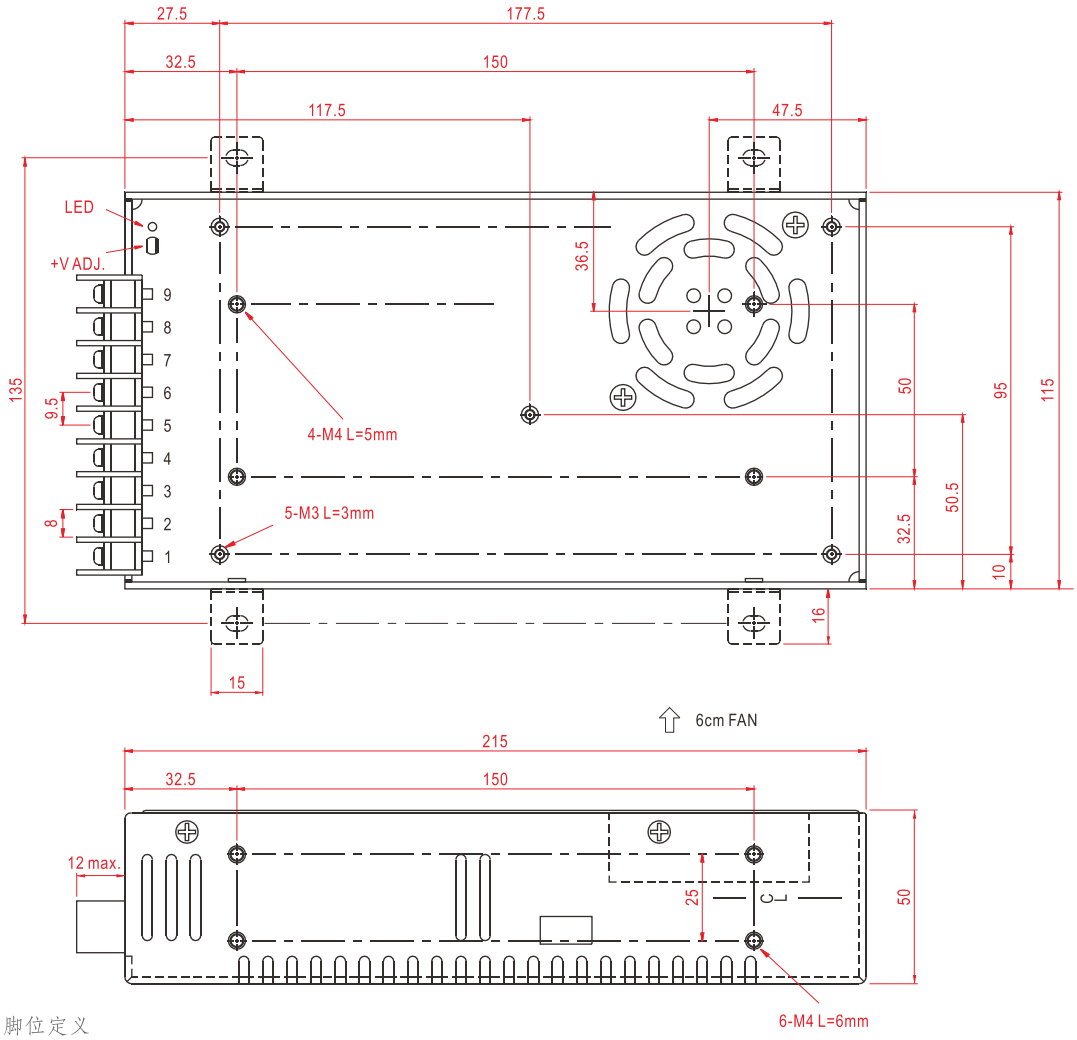
- 交流输入范围通过开关切换
- 保护种类: 短路/过负载/过电压/过温度
- 内置直流风扇强制风冷
- PWM控制
- 冷却风扇自动控制
- 100%满载老化
- 开关工作频率: 25KHZ
- 低成本
- 1年保固

电气规格

型号		S-400-5	S-400-7.5	S-400-12	S-400-13.5	S-400-15	S-400-24	S-400-27	S-400-36	S-400-48
输出	直流电压	5V	7.5V	12V	13.5V	15V	24V	27V	36V	48V
	额定电流	60A	50A	33A	29.5A	26.5A	16.5A	14.8A	11A	8.3A
	电流范围	0~60A	0~50A	0~33A	0~29.5A	0~26.5A	0~16.5A	0~14.8A	0~11A	0~8.3A
	额定功率	300W	375W	396W	398.25W	397.5W	396W	399.6W	396W	398.4W
	纹波与噪声 (最大)备注2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	240mVp-p
	电压调整范围	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	32~40V	41 ~ 56V
	电压精度 备注3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	线性调整率	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	负载调整率	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	启动、上升时间	200ms, 50ms(满载时)								
	保持时间(Typ.)	20ms(满载时)								
输入	电压范围	90 ~ 132VAC/180~264VAC(开关切换)或254 ~ 370VDC								
	频率范围	47 ~ 63Hz								
	效率(Typ.)	73%	76%	74%	79%	78%	81%	82%	83%	83%
	交流电流(Typ.)	8A/115VAC　5A/230VAC								
	浪涌电流(Typ.)	50A/115VAC　50A/230VAC								
	漏电流	<3.5mA / 240VAC								
保护	过负载	额定输出功率的105%~135%								
		保护模式:定电流限制，负载异常条件移除后可自动恢复								
	过电压	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	40.5~46.5V	57.6 ~ 67.2V
		保护模式:打嗝模式，电压异常条件移除后可自动恢复								
功能	风扇开关控制	RTH3≧50℃ 风扇开, ≦45℃ 风扇关, ≧80℃(5 ~ 7.5V) 关闭输出								
		RTH3≧55℃ 风扇开, ≦50℃ 风扇关, ≧85℃(12~ 48V) 关闭输出								
环境	工作温度	-10～+60℃ (请参考负载减额曲线)								
	工作湿度	20 ~ 90% RH,无冷凝								
	储存温度、湿度	-20 ~ +85℃, 10 ~ 95% RH								
	温度系数	±0.03%/℃ (0～50℃)								
	耐振动	10 ~ 500Hz, 2G 10分钟/周期, X、Y、Z轴各60分钟								
安规和电磁兼容	耐压	I/P-O/P:1.5KVAC　I/P-FG:1.5KVAC　O/P-FG:0.5KVAC								
	绝缘阻抗	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
其它	MTBF	≥234.3K hrs. MIL-HDBK-217F (25℃)								
	尺寸	215*115*50mm (L*W*H)								
	包装	1.07Kg; 12pcs/13.5Kg/0.92CUFT								
备注	1. 如未特别说明，所有规格参数均在输入为230VAC、额定负载、25℃环境温度下进行量测。 2. 纹波和噪声测量方法：使用一条12"双绞线，同时终端要并联0.1uf和47uf的电容，在20MHZ带宽下进行量测。 3. 精度：包含设定误差、线性调整率和负载调整率。									

■ 机构尺寸

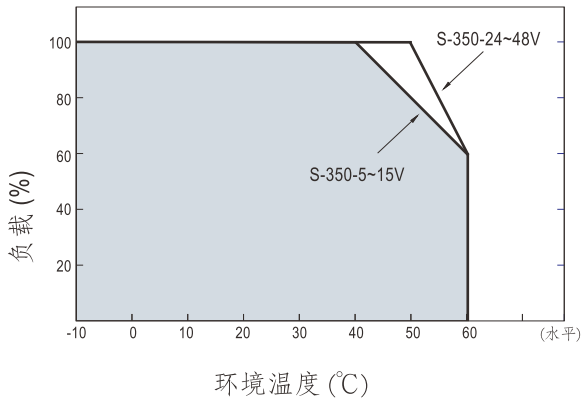
机壳型号:912C 单位:mm



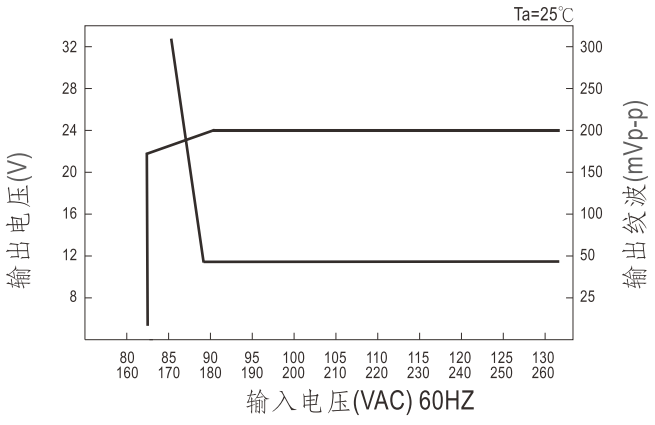
端子台脚位定义

引脚编号	引脚功能	引脚编号	引脚功能
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ 负载减额曲线



■ 静态特性曲线(24V)



NIETZ 500W Single Output Switching Power Supply **S-500 series**

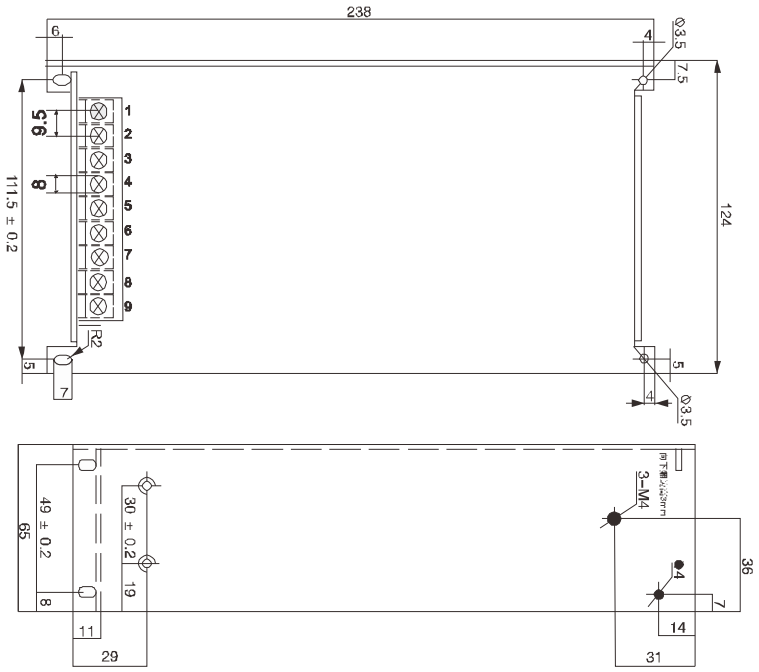
■ Features :

- Ac input:180~264VAC
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Forced air cooling by built-in DC fan
- Withstand 300vac surge input for 5 second
- Built-in cooling Fan ON-OFF control
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indic ator for power on
- Fixed switching frequency at 70kHz
- Low cost,high reliability
- 1 years warranty

SPECIFICATION

MODEL		S-500-12	S-500-24	S-500-36	S-500-48
OUTPUT	DC VOLTAGE	12V	24V	36V	48V
	RATED CURRENT	40A	20A	13.4A	10A
	CURRENT RANGE	0~40A	0~20A	0~13.4A	0~10A
	RATED POWER	480W	480W	482.4W	480W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	10 ~ 13.5V	20 ~ 26.4V	32~40V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±1.5%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms,50ms/230VAC at full load			
	HOLD UP TIME (Typ.)	20ms/230VAC at full load			
INPUT	VOLTAGE RANGE Note.4	180~264VAC 254~370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	82%	86%	87%	87%
	AC CURRENT (Typ.)	5A/230VAC			
	INRUSH CURRENT (Typ.)	60A/230VAC			
	LEAKAGE CURRENT	<3.5mA / 240VAC			
PROTECTION	OVER LOAD	105 ~ 135% rated output power			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	13.8 ~ 16.2V	27.6 ~ 32.4V	41.4~46.8V	57.6 ~ 67.2V
		Protection type :Shut down O/P voltage, re-power on to recover			
	OVER TEMPERATURE	RTH1≥85℃Detect on case			
		Protection type : Shut down O/P voltage, recovers automatically after temperature goes down			
FUNCTION	FAN ON/OFF CONTROL(Typ.)	RTH2≥55℃ FAN ON,≤50℃ FAN OFF			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes			
SAFETY	SAFETY STANDARDS	UL60950-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH			
OTHERS	MTBF	234.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	238*124*65mm (L*W*H)			
	PACKING	1.45kg/9Pcs/14kg			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Please connect positive pole of input voltage with mark "L" of terminal block, connect negative pole of input voltage with mark "N" of terminal block, using DC voltage for input voltage.				

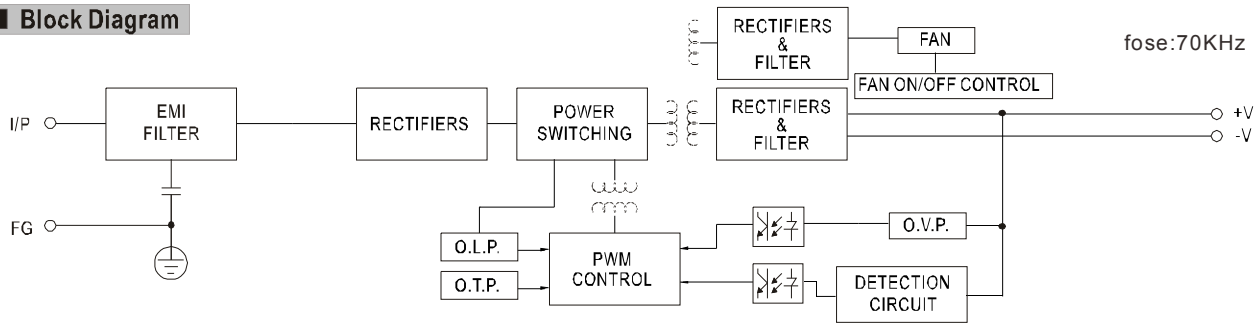
■ Mechanical Specification



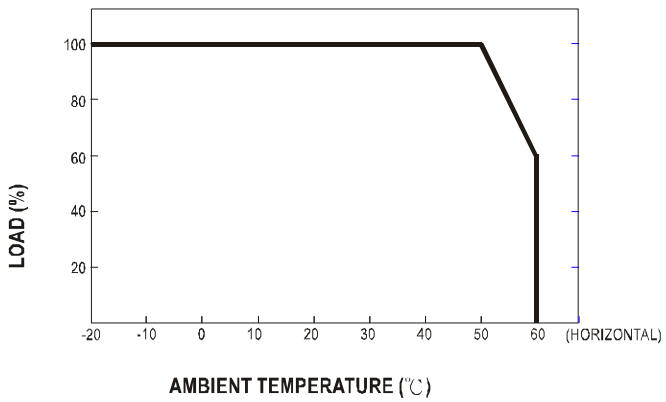
Terminal Pin No. assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

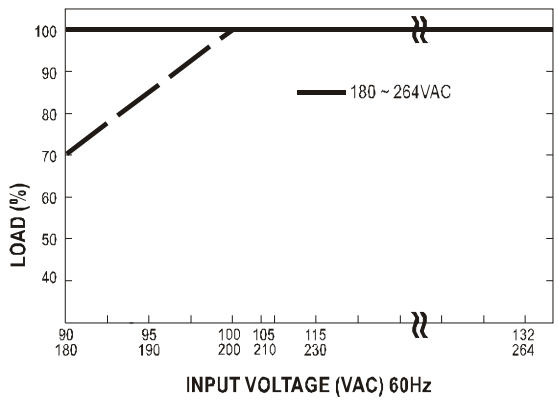
■ Block Diagram



■ Derating Curve



■ Static Characteristics



NIETZ 15W Single Output DC-DC Converter **SD-15 series**

■ Features :

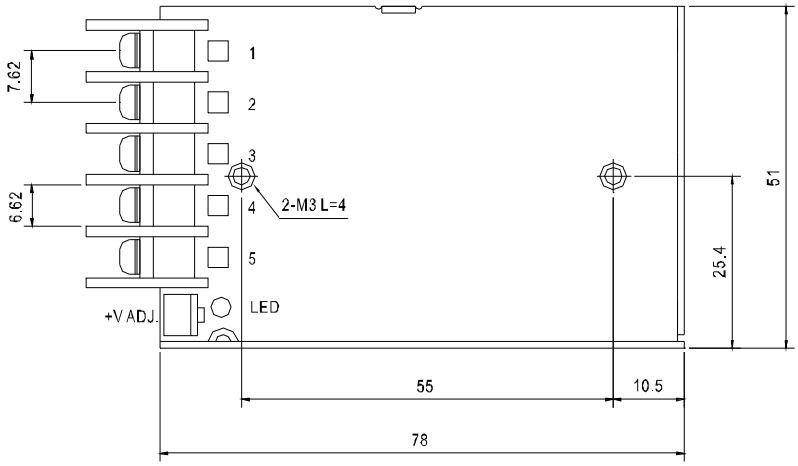
- 2:1 wide input range
- Protections:Short circuit/Over load /voltage
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Low cost
- High reliability

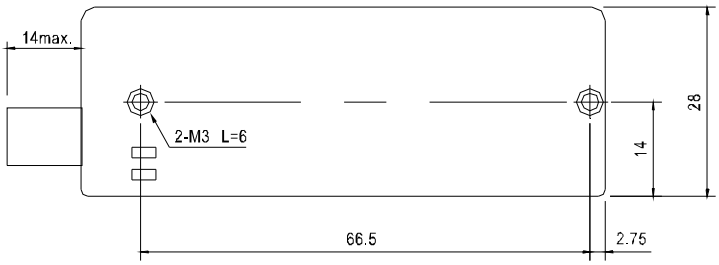
SPECIFICATION

MODEL		SD-15A-05	SD-15B-05	SD-15C-05	SD-15A-12	SD-15B-12	SD-15C-12	SD-15A-24	SD-15B-24	SD-15C-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	3A			1.25A			0.625A		
	CURRENT RANGE	0 ~ 3A			0 ~ 1.25A			0 ~ 0.625A		
	RATED POWER	15W			15W			15W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ.RANGE	4.75~5.5VDC			10.8~13.2VDC			21.6~26.4VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%			±0.2%		
	LOAD REGULATION	±0.5%			±0.3%			±0.2%		
	SETUP, RISE ,HOLD UP TIME	2.5s, 25ms,--- 12VDC/24VDC/48VDC at full load								
INPUT	VOLTAGE RANGE	A: 9.2 ~18VDC	B:18 ~ 36VDC	C:36~72VDC						
	EFFICIENCY(Typ.)	68%	76%	75%	72%	76%	79%	70%	77%	78%
	DC CURRENT(Typ.)	1.9A/12VDC	0.9A/24VDC	0.45A/48VDC						
PROTECTION	OVER LOAD	105 ~160% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V			13.8~ 16.2V			27.6 ~ 32.4V		
		Protection type : Shut off o/p voltage, clamping by zener diode								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min.each along X, Y, Z axes								
SAFETY & EMC (Note 4)	WITHSTAND VOLTAGE	I/P-O/P:2KVAC I/P-FG:1KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P,I/P-FG,O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022(CISPR22)								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, EN55024, light industry level, criteria A								
OTHERS	DIMENSION	78*51*28mm (L*W*H)								
	PACKING	0.18kg,60 PCS/11.8kg								
NOTE	1. All parameters NOT specially mentioned are measured at normal input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 931A Unit:mm



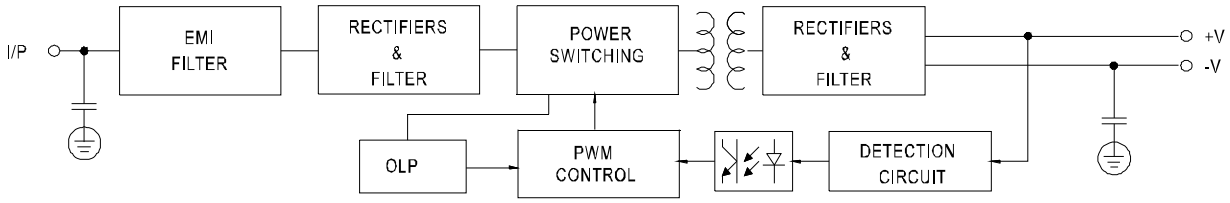


Terminal Pin No. Assignment

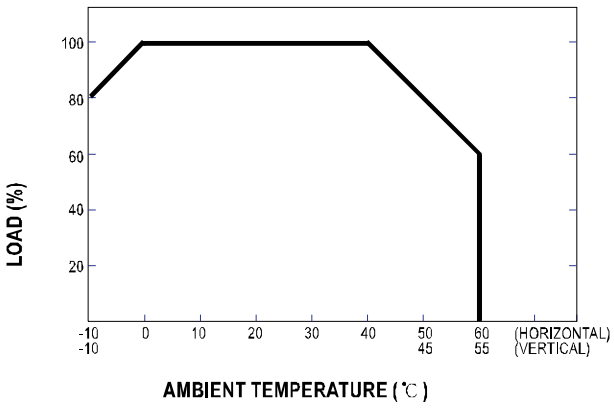
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4	DC OUTPUT +V
2	DC INPUT V-	5	DC OUTPUT -V
3	FG ⏚		

■ Block Diagram

fosc : 96KHz



■ Derating Curve



NIETZ 25W Single Output DC-DC Converter **SD-25 series**

■ Features :

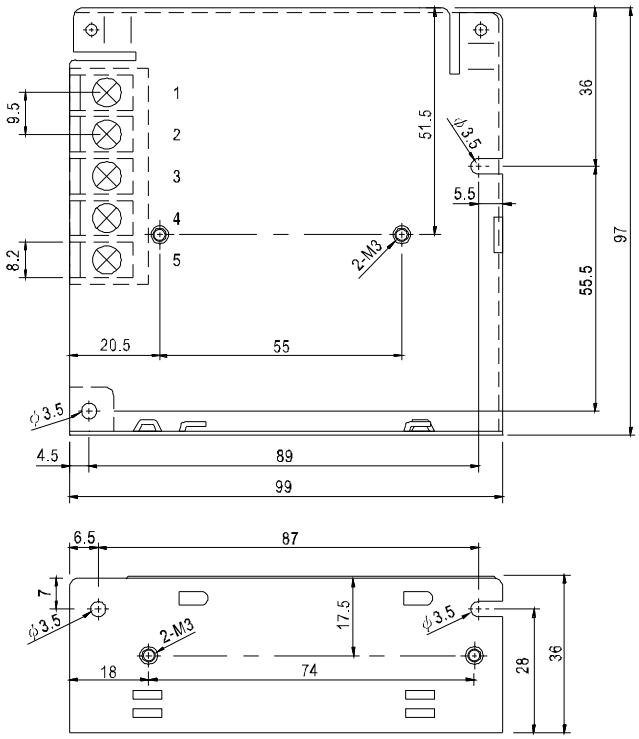
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage
- 1500VAC I/O isolation
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fixed switching frequency at 83KHz
- Low cost
- High reliability

SPECIFICATION

MODEL		SD-25A-5	SD-25B-5	SD-25C-5	SD-25A-12	SD-25B-12	SD-25C-12	SD-25A-24	SD-25B-24	SD-25C-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	5A			2.1A			1.1A		
	CURRENT RANGE	0 ~ 5A			0 ~ 2.1A			0 ~ 1.1A		
	RATED POWER	25W			25.2W			26.4W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC			11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%			±0.2%		
	LOAD REGULATION	±0.5%			±0.3%			±0.2%		
	SETUP, RISE, HOLD UP TIME	2.5s, 50ms, ------ at full load								
INPUT	VOLTAGE RANGE	A:9.2 ~ 18VDC	B:19 ~ 36VDC		C:36 ~ 72VDC					
	EFFICIENCY (Typ.)	71%	72%	74%	72%	75%	78%	75%	78%	81%
	DC CURRENT	3.2A/12V			1.6A/24V			0.8A/48V		
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V/10% load			16.8 ~ 20V/10% load			31.5 ~ 37.5V/10% load		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Design refer to LVD								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, EN55024,heavy industry level, criteria A								
OTHERS	MTBF	374.3K hrs min.(SD-25A) 365.9K hrs min.(SD-25B) 377.5K Hrs min.(SD-25C) MIL-HDBK-217F (25℃)								
	DIMENSION	99*97*36mm (L*W*H)								
	PACKING	0.38Kg; 45pcs/17.8Kg/0.9CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 905 Unit:mm

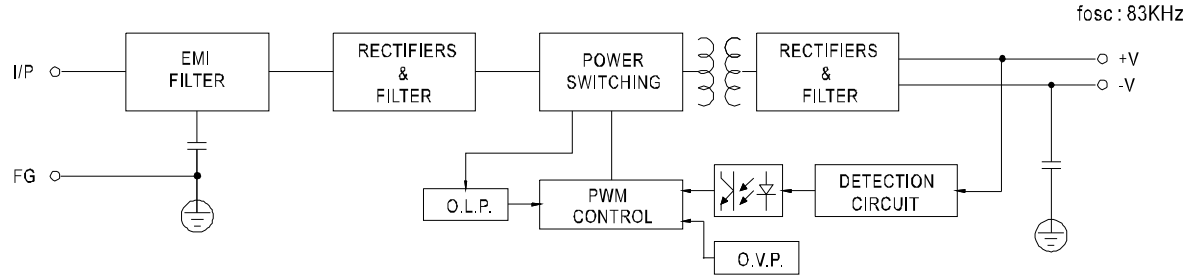


Terminal Pin No. Assignment

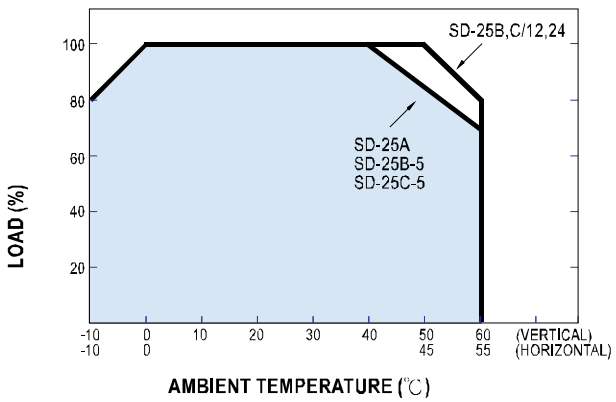
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V-	4	DC OUTPUT +V
2	DC INPUT V+	5	DC OUTPUT -V
3	FG ⏚		

■ Block Diagram

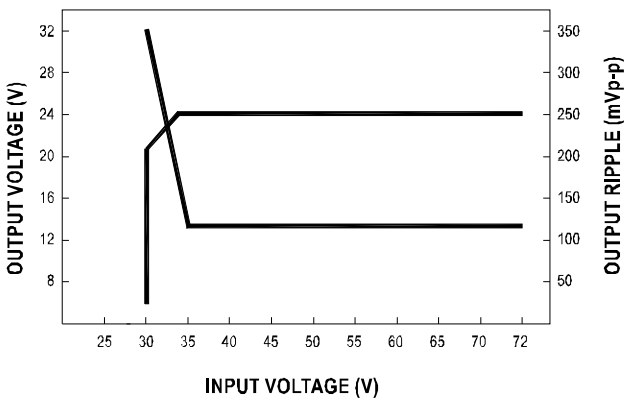
fosc : 83KHz



■ Derating Curve



■ Static Characteristics(SD-25C-24V)



NIETZ 50W Single Output DC-DC Converter **SD-50 series**

■ Features :

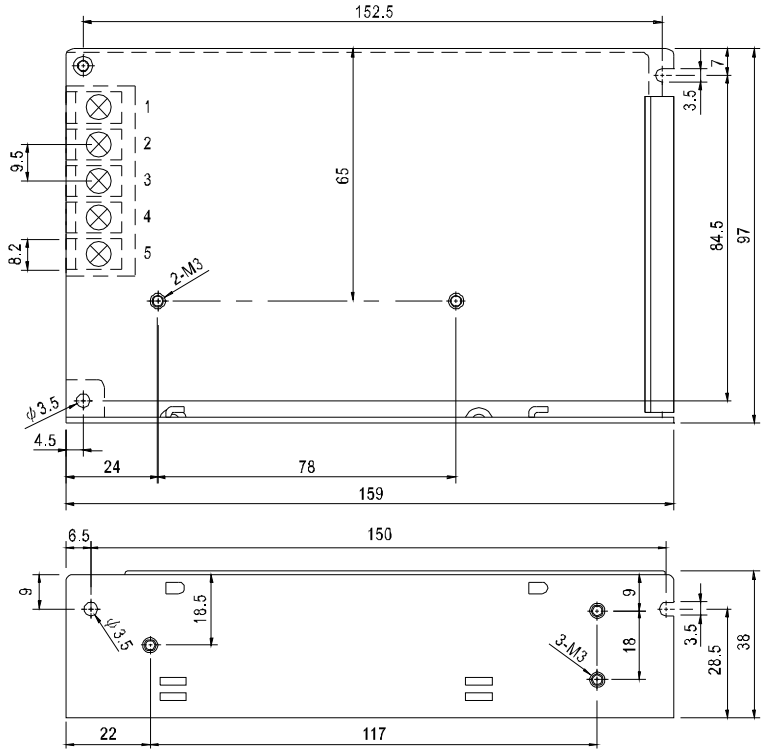
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage
- 1500VAC I/O isolation
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fixed switching frequency at 83KHz
- Low cost
- High reliability

SPECIFICATION

MODEL		SD-50A-5	SD-50B-5	SD-50C-5	SD-50A-12	SD-50B-12	SD-50C-12	SD-50A-24	SD-50B-24	SD-50C-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	10A			4.2A			2.1A		
	CURRENT RANGE	0 ~ 10A			0 ~ 4.2A			0 ~ 2.1A		
	RATED POWER	50W			50.4W			50.4W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC			11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%			±0.2%		
	LOAD REGULATION	±0.5%			±0.3%			±0.2%		
	SETUP, RISE, HOLD UP TIME	2.5s, 50ms, ----- at full load								
INPUT	VOLTAGE RANGE	A:9.2 ~ 18VDC		B:19 ~ 36VDC			C:36 ~ 72VDC			
	EFFICIENCY (Typ.)	70%	73%	76%	72%	75%	78%	74%	80%	83%
	DC CURRENT	7A/12V			3A/24V			1.5A/48V		
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V/10% load			16.8 ~ 20V/10% load			31.5 ~ 37.5V/10% load		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	Design refer to LVD								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, EN55024, heavy industry level, criteria A								
OTHERS	MTBF	365.6K hrs min.(SD-50A) 357.5K hrs min.(SD-50B) 368.5K Hrs min.(SD-50C) MIL-HDBK-217F (25℃)								
	DIMENSION	159*97*38mm (L*W*H)								
	PACKING	0.48Kg; 24pcs/12.7Kg/0.75CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 901 Unit:mm

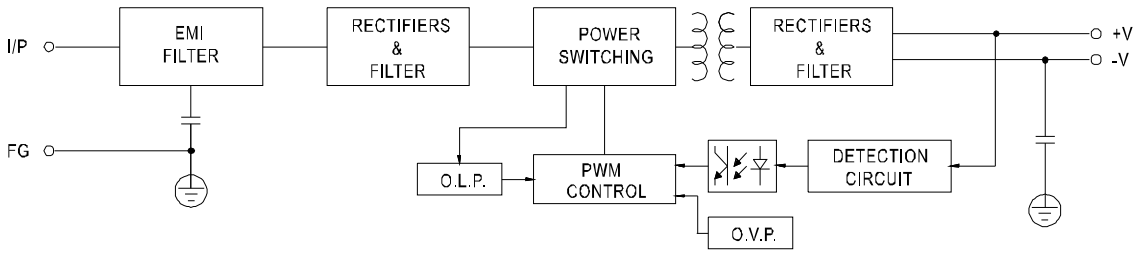


Terminal Pin No. Assignment

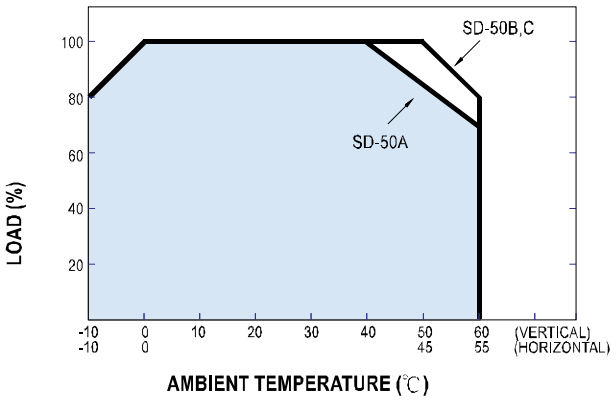
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4	DC OUTPUT -V
2	DC INPUT V-	5	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

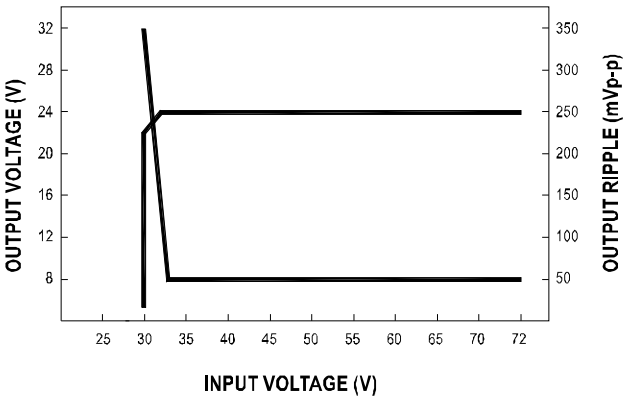
fosc : 83KHz



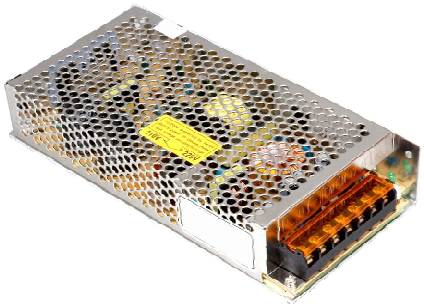
■ Derating Curve



■ Static Characteristics(SD-50C-24V)



NIETZ 100W Single Output DC-DC Converter SD-100 series



■ Features :

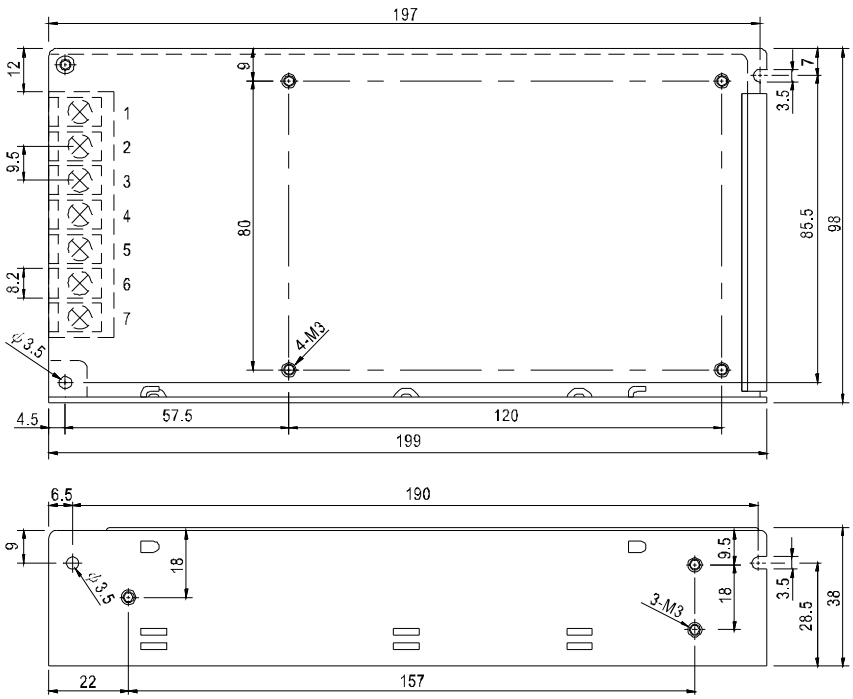
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage
- 1500VAC I/O isolation
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- Fixed switching frequency at 83KHz
- 24V and 48V input voltage design refer to LVD
- Low cost
- High reliability

SPECIFICATION

MODEL		SD-100B-5	SD-100C-5	SD-100D-5	SD-100B-12	SD-100C-12	SD-100D-12	SD-100B-24	SD-100C-24	SD-100D-24
OUTPUT	DC VOLTAGE	5V			12V			24V		
	RATED CURRENT	20A			8.5A			4.2A		
	CURRENT RANGE	0 ~ 20A			0 ~ 8.5A			0 ~ 4.2A		
	RATED POWER	100W			102W			100.8W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p			120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC			11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE Note.3	±2.0%			±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%			±0.2%		
	LOAD REGULATION	±0.5%			±0.3%			±0.2%		
	SETUP, RISE TIME	2s, 50ms(only D mode) at full load								
	HOLD UP TIME (Typ.)	20ms(only D mode) at full load								
INPUT	VOLTAGE RANGE	B:19 ~ 36VDC C:36 ~ 72VDC D:72 ~ 144VDC or 85 ~ 132VAC								
	EFFICIENCY (Typ.)	74%	75%	76%	75%	77%	80%	78%	81%	83%
	DC CURRENT (Typ.)	4.8A/24V	2.4A/48V	1.8A/96V	4.8A/24V	2.4A/48V	1.8A/96V	4.8A/24V	2.4A/48V	1.8A/96V
	INRUSH CURRENT (Typ.)	D:18A/96VDC								
	LEAKAGE CURRENT	<0.75mA/120VAC(SD-100D)								
PROTECTION	OVERLOAD	105 ~ 135% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5.75 ~ 6.75V/10% load			16.8 ~ 20V/10% load			31.5 ~ 37.5V/10% load		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV (for D type only)								
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A								
OTHERS	MTBF	356.7K hrs min.(SD-100B) 355.5K hrs min.(SD-100C) 341.9K Hrs min.(SD-100D) MIL-HDBK-217F (25℃)								
	DIMENSION	199*98*38mm (L*W*H)								
	PACKING	0.65Kg; 20pcs/13.8Kg/0.8CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 902 Unit:mm



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1,2	INPUT ※	4,5	DC OUTPUT -V
3	FG ⏚	6,7	DC OUTPUT +V

※ SD-100B,C

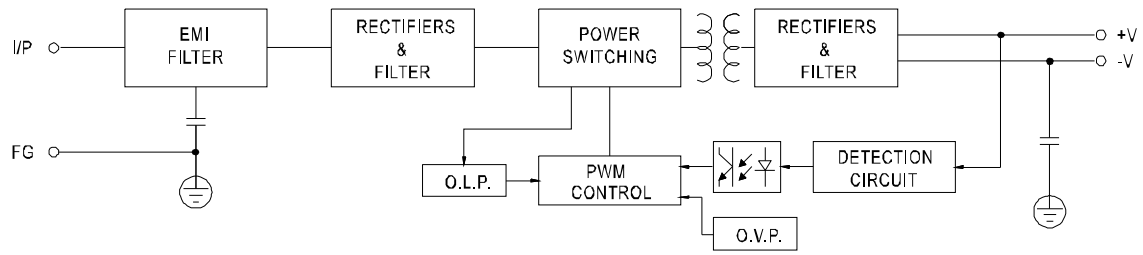
Pin No.	Assignment
1	DC INPUT V+
2	DC INPUT V-

※ SD-100D

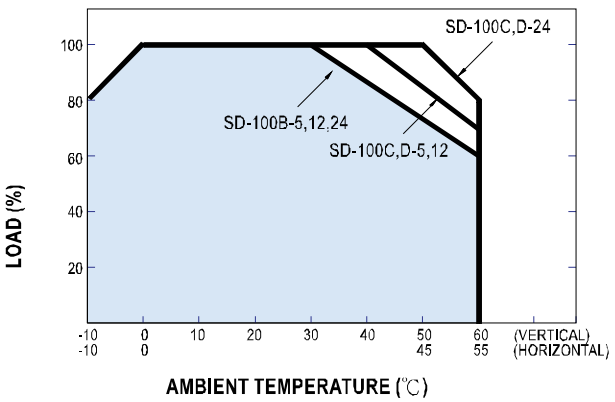
Pin No.	Assignment
1,2	AC/DC INPUT

■ Block Diagram

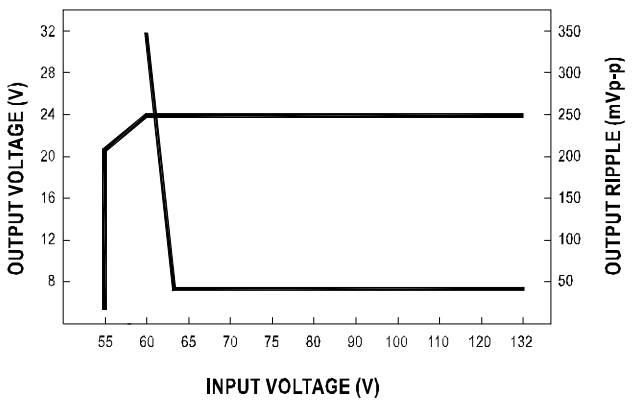
fosc : 83KHz



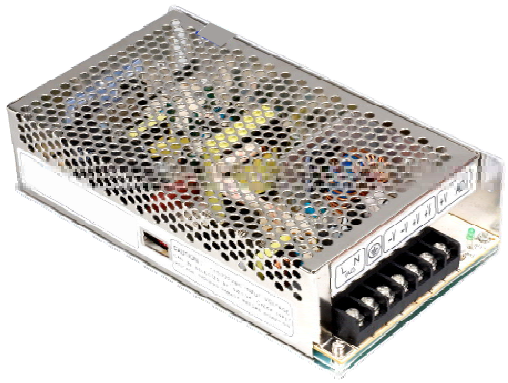
■ Derating Curve



■ Static Characteristics(SD-100D-24V)



NIETZ 150W Single Output DC-DC Converter **SD-150 series**



■ Features :

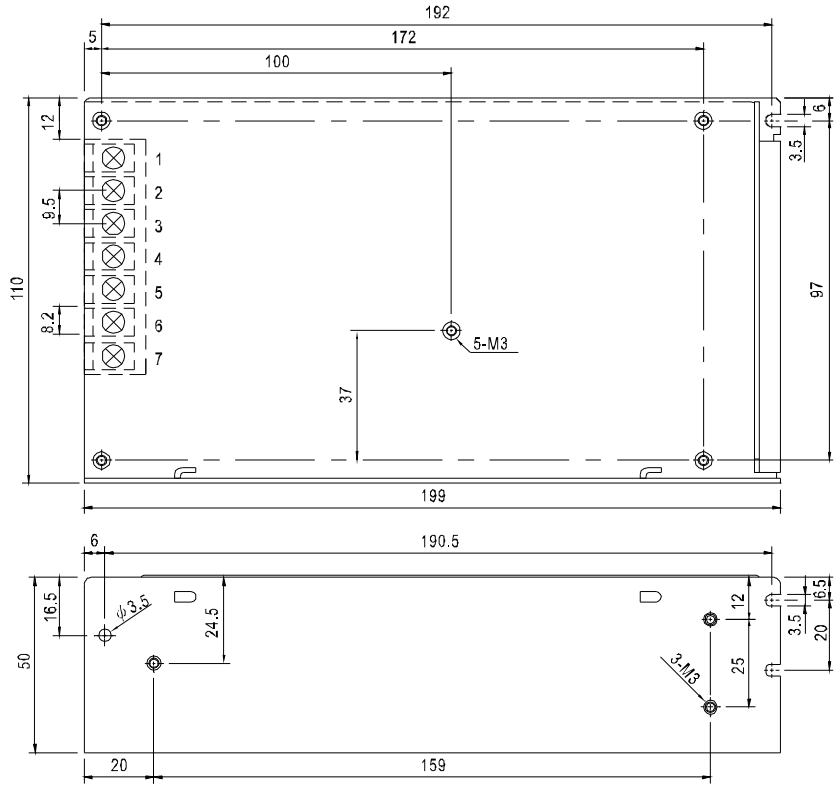
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage
- 1500VAC I/O isolation
- Built-in EMI filter, low ripple noise
- 100% full load burn-in test
- 24V and 48V input voltage design refer to LVD
- Low cost
- High reliability
- 2 years warranty

SPECIFICATION

MODEL		SD-150B-12	SD-150C-12	SD-150D-12	SD-150B-24	SD-150C-24	SD-150D-24
OUTPUT	DC VOLTAGE	12V			24V		
	RATED CURRENT	12.5A			6.3A		
	CURRENT RANGE	0 ~ 12.5A			0 ~ 6.3A		
	RATED POWER	150W			151.2W		
	RIPPLE & NOISE (max.) Note.2	120mVp-p			150mVp-p		
	VOLTAGE ADJ. RANGE	11 ~ 16VDC			23 ~ 30VDC		
	VOLTAGE TOLERANCE Note.3	±1.0%			±1.0%		
	LINE REGULATION	±0.5%			±0.3%		
	LOAD REGULATION	±0.5%			±0.3%		
	SETUP, RISE TIME	2s, 50ms(only D mode) at full load					
	HOLD UP TIME (Typ.)	24ms(only D mode) at full load					
INPUT	VOLTAGE RANGE	B:19 ~ 36VDC	C:36 ~ 72VDC	D:72 ~144VDC or 85 ~ 132VAC			
	EFFICIENCY (Typ.)	75%	77%	79%	77%	80%	82%
	DC CURRENT (Typ.)	6.8A/24V	3.4A/48V	2.7A/96V	6.8A/24V	3.4A/48V	2.7A/96V
	INRUSH CURRENT (Typ.)	D:22.5A/96VDC					
	LEAKAGE CURRENT	<0.75mA / 120VAC (SD-150D)					
PROTECTION	OVERLOAD	105 ~ 135% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	16.8V ~ 20V/10% LOAD			31.5 ~ 37.5V/10% LOAD		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV (for D type only)					
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A					
OTHERS	MTBF	296.2K hrs min.(SD-150B) 289.9K hrs min.(SD-150C) 289K Hrs min.(SD-150D) MIL-HDBK-217F (25℃)					
	DIMENSION	199*110*50mm (L*W*H)					
	PACKING	0.86Kg; 16pcs/14.5Kg/0.95CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.						

■ Mechanical Specification

Case No. 906 Unit:mm



Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1,2	INPUT ※	4,5	DC OUTPUT -V
3	FG ⏚	6,7	DC OUTPUT +V

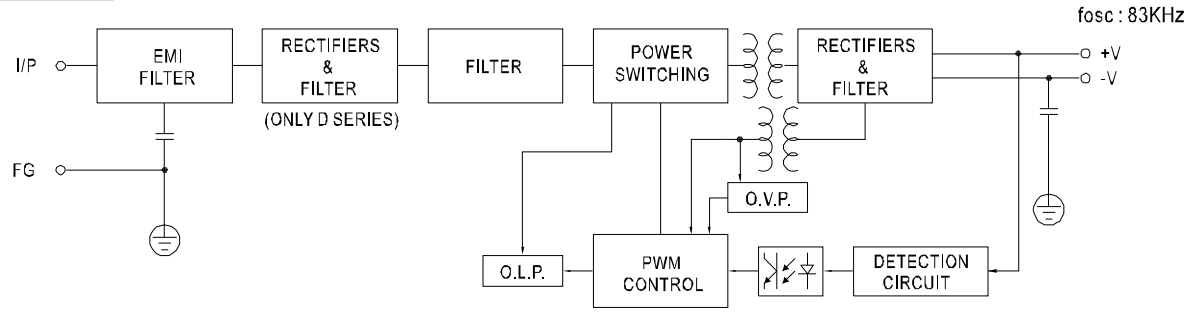
※ SD-150B,C

Pin No.	Assignment
1	DC INPUT V+
2	DC INPUT V-

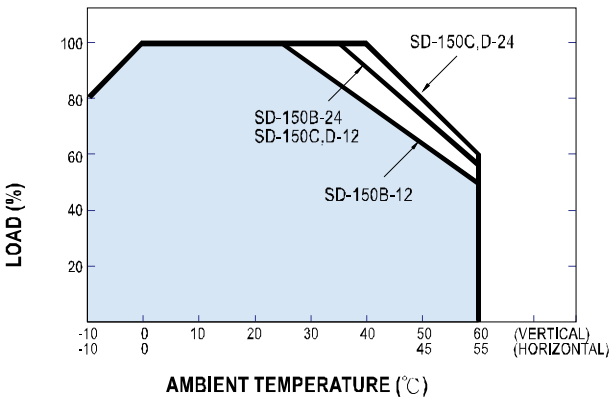
※ SD-150D

Pin No.	Assignment
1,2	AC/DC INPUT

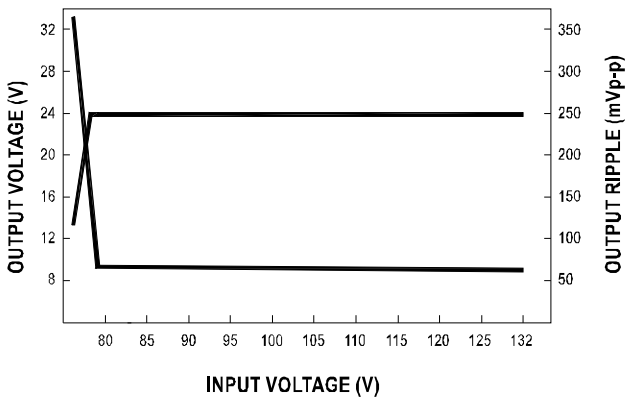
■ Block Diagram



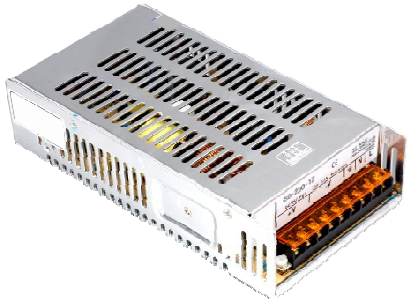
■ Derating Curve



■ Static Characteristics (24V)



NIETZ 200W Single Output DC-DC Converter **SD-200 series**



■ Features :

- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 1500VAC I/O isolation
- Cooling by free air convection
- 100% full load burn-in test
- 24V and 48V input voltage design refer to LVD

SPECIFICATION

MODEL		SD-200B				SD-200C			
OUTPUT	DC VOLTAGE	5V	12V	24V	48V	5V	12V	24V	48V
	RATED CURRENT	34A	16.7A	8.4A	4.2A	40A	16.7A	8.4A	4.2A
	CURRENT RANGE	0 ~ 34A	0 ~ 16.7A	0 ~ 8.4A	0 ~ 4.2A	0 ~ 40A	0 ~ 16.7A	0 ~ 8.4A	0 ~ 4.2A
	RATED POWER	170W	200.4W	201.6W	201.6W	200W	200.4W	201.6W	201.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	150mVp-p	200mVp-p	100mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC	11 ~ 16VDC	23 ~ 30VDC	43 ~ 53VDC	4.5 ~ 5.5VDC	11 ~ 16VDC	23 ~ 30VDC	43 ~ 53VDC
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	300ms, 50ms at full load							
INPUT	VOLTAGE RANGE	B:19 ~ 36VDC C:36 ~ 72VDC D:72 ~144VDC							
	EFFICIENCY (Typ.)	79%	82%	85%	86%	81%	84%	86%	86%
	DC CURRENT (Typ.)	10.8A/24V	10.6A/24V	10.4A/24V	10.4A/24V	5.4A/48V	5.2A/48V	6.7A/48V	5A/48V
	INRUSH CURRENT (Typ.)	C:45A/48VDC D:45A/96VDC							
PROTECTION	OVERLOAD	105 ~ 135% rated output power							
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER VOLTAGE	5.75 ~ 6.75V	16.8 ~ 20V	31.5 ~ 37.5V	53 ~ 65V	5.75 ~ 6.75V	16.8 ~ 20V	31.5 ~ 37.5V	53 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	95℃±5℃ (100℃±5℃ for SD-200B-12 only) TSW1 detect on main power transistor							
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1approved (for SD-200C-24 type only), IEC60950-1 CB approved by TUV (for D type only)							
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH							
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A							
OTHERS	MTBF	218.2K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*50mm (L*W*H)							
	PACKING	1.1Kg; 12pcs/14.4Kg/0.92CUFT							
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.								

NIETZ 200W Single Output DC-DC Converter SD-200 series

■ Features :

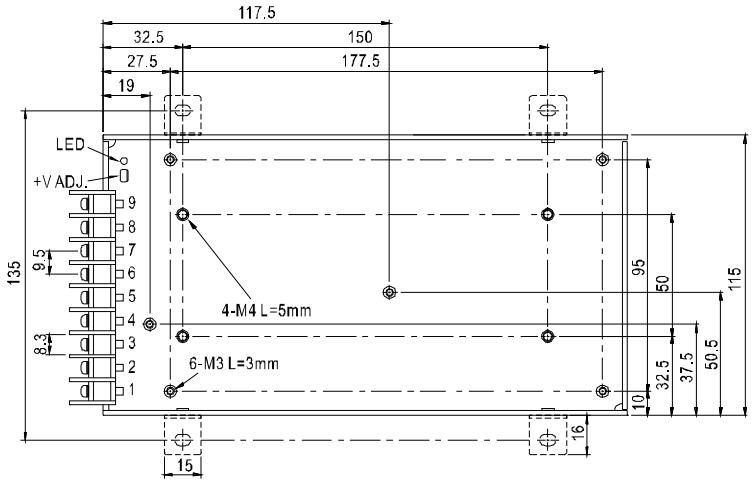
- 2:1 wide input range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 1500VAC I/O isolation
- Cooling by free air convection
- 100% full load burn-in test
- 24V and 48V input voltage design refer to LVD

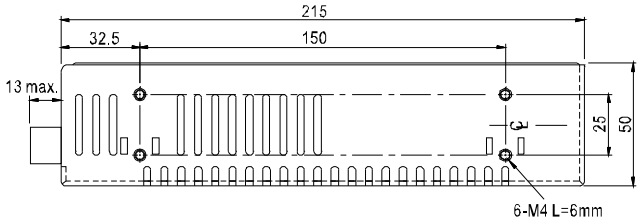
SPECIFICATION

MODEL		SD-200D			
OUTPUT	DC VOLTAGE	5V	12V	24V	48V
	RATED CURRENT	40A	16.7A	8.4A	4.2A
	CURRENT RANGE	0 ~ 40A	0 ~ 16.7A	0 ~ 8.4A	0 ~ 4.2A
	RATED POWER	200W	200.4W	201.6W	201.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.5 ~ 5.5VDC	11 ~ 16VDC	23 ~ 30VDC	43 ~ 53VDC
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	300ms, 50ms at full load			
INPUT	VOLTAGE RANGE	B:19 ~ 36VDC C:36 ~ 72VDC D:72 ~144VDC			
	EFFICIENCY (Typ.)	82%	82%	84%	90%
	DC CURRENT (Typ.)	3.5A/96V	3.5A/96V	3.5A/96V	3.5A/96V
	INRUSH CURRENT (Typ.)	C:45A/48VDC D:45A/96VDC			
PROTECTION	OVERLOAD	105 ~ 135% rated output power			
		Protection type : Shut down o/p voltage, re-power on to recover			
	OVER VOLTAGE	5.75 ~ 6.75V	16.8 ~ 20V	31.5 ~ 37.5V	53 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover			
	OVER TEMPERATURE	85℃±5℃(TSW1) detect on main power transistor			
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV (for D type only)			
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH			
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A			
OTHERS	MTBF	218.2K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	215*115*50mm (L*W*H)			
	PACKING	1.1Kg; 12pcs/14.4Kg/0.92CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 24,48,96VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."				

■ Mechanical Specification

Case No. 912H Unit:mm



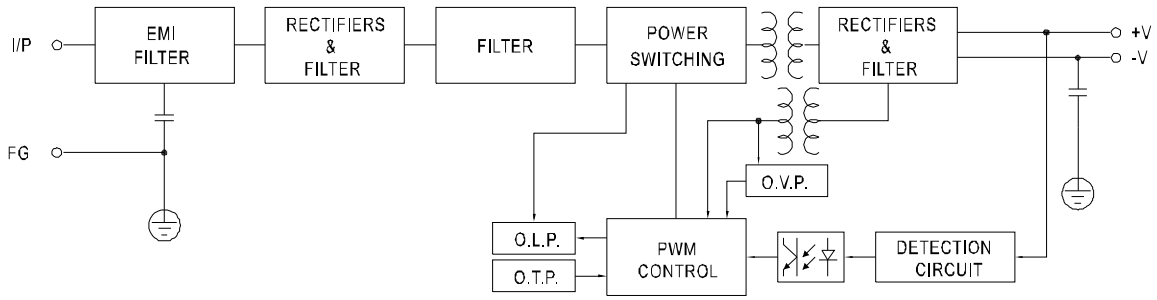


Terminal Pin No. Assignment :

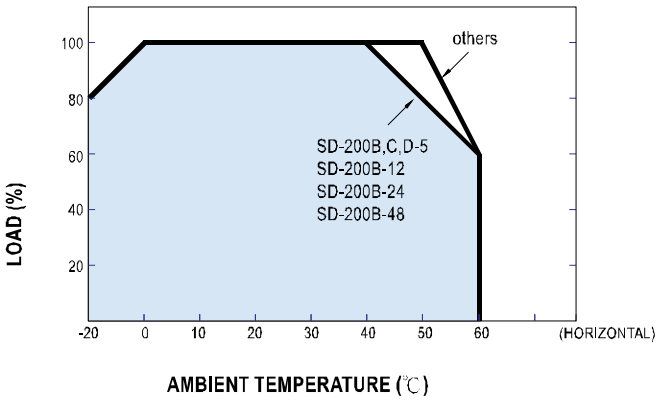
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4,5,6	DC OUTPUT V-
2	DC INPUT V-	7,8,9	DC OUTPUT V+
3	FG ⏚		

■ Block Diagram

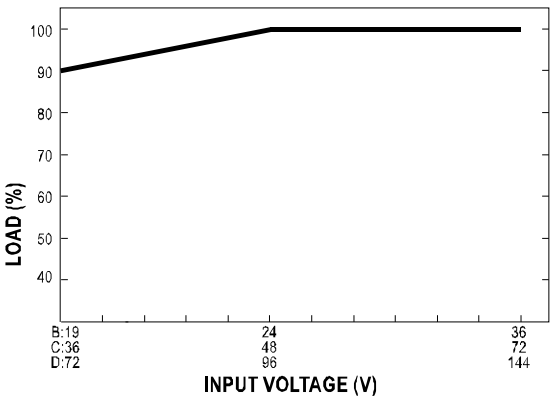
fosc : 100KHz



■ Derating Curve



■ Static Characteristics



NIETZ 500W Single Output DC-DC Converter **SD-500 series**

■ Features :

- DC input active surge current limiting
- Wide 4:1~2:1 DC input range (24V: 19~72VDC, 96V:72~144VDC)
- Protections: Short circuit / Overload / Over voltage / Over temperature / Input polarity(by fuse)
- 2000VAC I/O Isolation
- Forced air cooling by built-in DC fan with fan speed control function
- Output OK Signal
- Built-in remote ON-OFF control
- Built-in remote sense function

SPECIFICATION

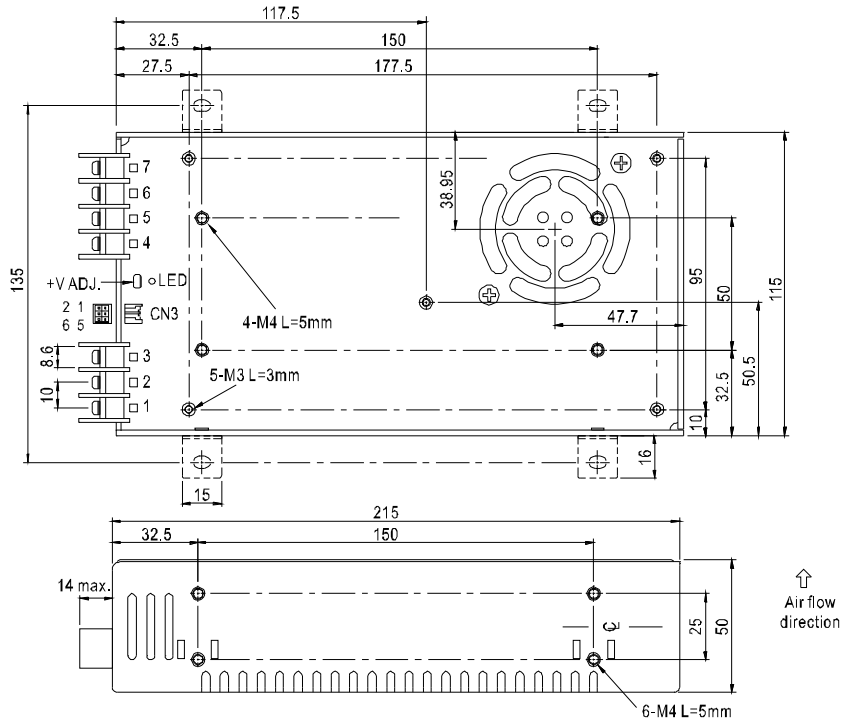
MODEL		SD-500L-12	SD-500L-24	SD-500L-48	SD-500H-12	SD-500H-24	SD-500H-48
OUTPUT	DC VOLTAGE	12V	24V	48V	12V	24V	48V
	RATED CURRENT	40A	21A	10.5A	40A	21A	10.5A
	CURRENT RANGE	0 ~ 40A	0 ~ 21A	0 ~ 10.5A	0 ~ 40A	0 ~ 21A	0 ~ 10.5A
	RATED POWER	480W	504W	504W	480W	504W	504W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	11 ~ 15V	23 ~ 30V	46 ~ 60V	11 ~ 15V	23 ~ 30V	46 ~ 60V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	500ms, 50ms at full load					
INPUT	VOLTAGE RANGE Note.5	19 ~ 72VDC			72 ~ 144VDC		
	EFFICIENCY (Typ.)	86%	88%	89%	87%	89%	90%
	DC CURRENT (Typ.)	24.2A/19VDC 24.8A/24VDC 12A/48VDC			8A/72VDC 6A/96VDC		
	CURRENT (AT NO LOAD)	Max. 0.2A/48VDC			Max. 0.1A/96VDC		
	INRUSH CURRENT (Typ.)	60A/48VDC			60A/96VDC		
PROTECTION	OVERLOAD	105 ~ 125% rated output power					
		Protection type : Constant current limiting, shut down o/p voltage after about 5 sec., re-power on to recover					
	OVER VOLTAGE	16 ~ 19V	30.8 ~ 35.2V	62 ~ 68V	16 ~ 19V	30.8 ~ 35.2V	62 ~ 68V
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	80℃±5℃ (TSW1) detect on heatsink of power transistor					
		80℃±5℃(L-48V,H-24V,H-48V), 85℃±5℃(L-24V), 90℃±5℃(L-12V), 95℃±5℃(H-12V) (TSW2 : detect on heatsink of o/p diode)					
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down					
FUNCTION	REMOTE ON/OFF CONTROL	Please refer to function manual					
	OUTPUT OK SIGNAL	Open collector signal low when PSU turns on, max. sink current :10mA					
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.02%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	IEC60950-1 CB approved by TUV					
	WITHSTAND VOLTAGE	I/P-O/P:2KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A					
OTHERS	MTBF	196.3K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	215*115*50mm (L*W*H)					
	PACKING	1.15Kg; 12pcs/14.8Kg/0.92CUFT					

NOTE

1. All parameters NOT specially mentioned are measured at 48, 96VDC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."
5. Derating may be needed under low input voltages. Please check the derating curve for more details.

■ Mechanical Specification

Case No. 912A Unit:mm



DC Input Terminal Pin No. Assignment

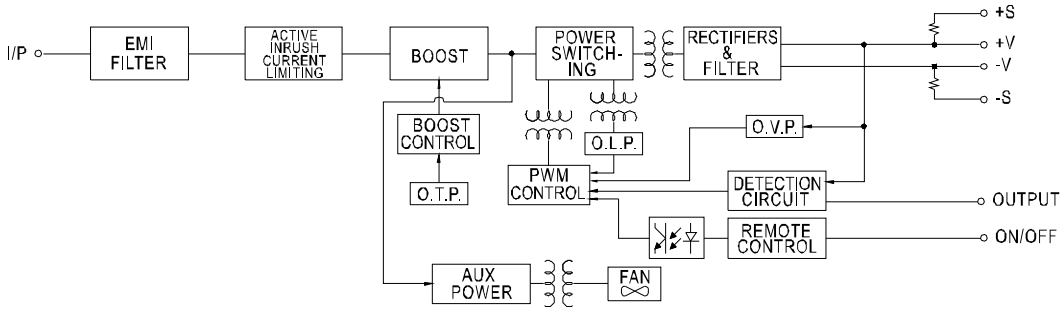
Pin No.	Assignment	Pin No.	Assignment
1	DC INPUT V+	4,5	-V
2	DC INPUT V-	6,7	+V
3	FG ⏚		

Control Pin No. Assignment (CN3) : HRS DF11-6DP-2DS or equivalent

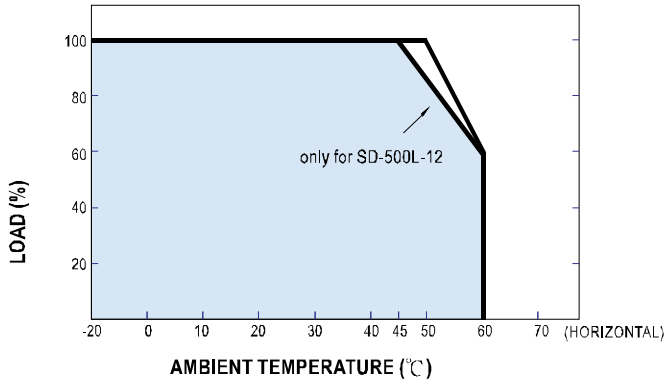
Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	+S	4	GND	HRS DF11-6DS or equivalent	JST SPHD-002T-P0.5 or equivalent
2	-S	5	RC		
3	OUTPUT OK	6	RCG		

■ Block Diagram

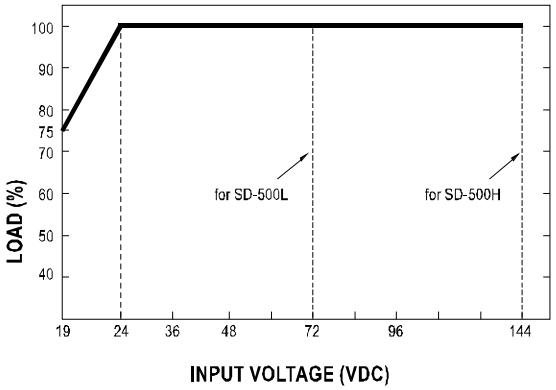
BOOST fosc : 65KHz
PWM fosc : 110KHz



■ Derating Curve



■ Static Characteristics



■ Function Description of CN3

Pin No.	Function	Description
1	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V.
2	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.5V.
3	O/P OK	Open collector signal, reference to pin4(GND). Low when PSU turns on. The maximum sink current is 10mA and the maximum external voltage is 13V.
4	GND	These pins connect to the negative terminal (-V).
5	RC	Remote ON/OFF
6	RCG	Remote ON/OFF ground

■ Function Manual

1.Remote ON/OFF

(1)Remote ON/OFF control becomes available by applying voltage in CN3

(2)Table 1.1 shows the specification of Remote ON/OFF function

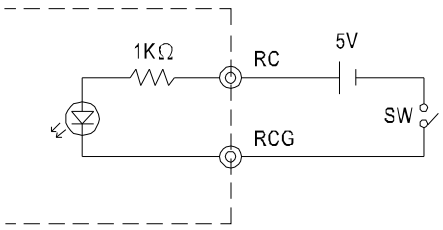
(3)Fig.1.2 shows the example to connect Remote ON/OFF control function

Table 1.1 Specification of Remote ON/OFF

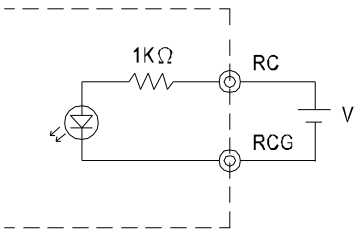
Connection Method	Fig. 1.2(A)	Fig. 1.2(B)
Output on	SW Open	V=0~0.8Vdc
Output off	SW Close	V=4~10Vdc

Fig.1.2 Examples of connecting remote ON/OFF

(A)Using external voltage source



(B)Using external voltage source



2.Output OK signal

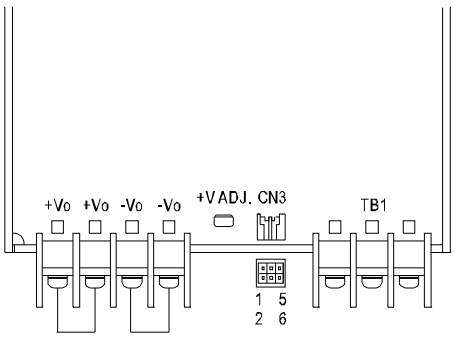
"Output OK" is an open collector signal.
It indicates the output status of the PSU. It can operate in two ways : One is sinking current from external signal ; the other is sending out a voltage signal.

2-1 Sink current :

The maximum sink current is 10mA and the maximum external voltage is 13V.

2-2 Voltage signal :

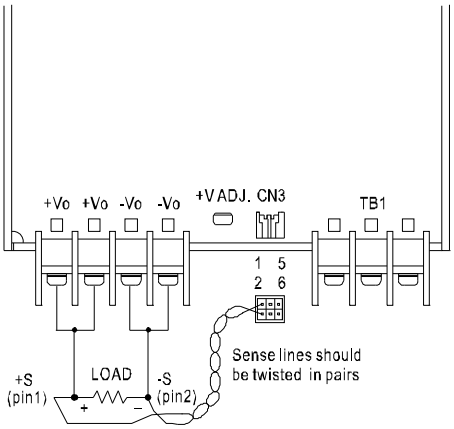
Between O/P OK(pin3) and GND(pin4)	Output Status
0 ~ 0.5V	ON
12 ~ 13V	OFF



1	CN3	5
+S	O/P OK	RC
-S	GND	RCG
2		6

3.Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.5V.



1	CN3	5
+S	O/P OK	RC
-S	GND	RCG
2		6

NIETZ 120W Single Output Industrial DIN RAIL with PFC Function **SDR-120 series**

Features :

- High efficiency 91% and low power dissipation
- 150% peak load capability
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test

SPECIFICATION

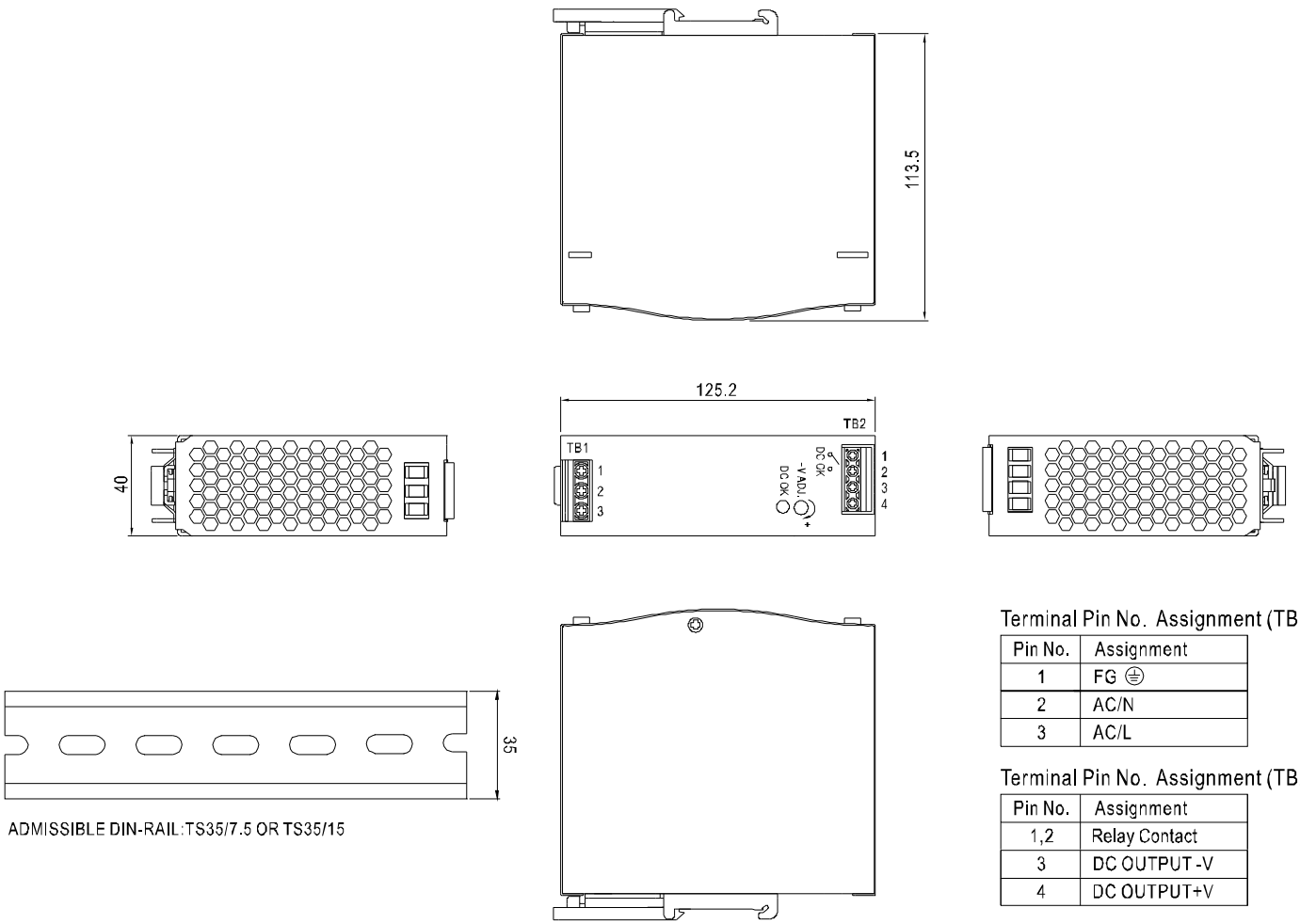
MODEL		SDR-120-12	SDR-120-24	SDR-120-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~ 2.5A
	RATED POWER	120W	120W	120W
	PEAK CURRENT	15A	7.5A	3.75A
	PEAK POWER Note.6	180W (3 sec.)		
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 14V	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME	1500ms, 60ms/230VAC 3000ms, 60ms/115VAC at full load		
	HOLD UP TIME (Typ.)	20ms/230VAC 20ms/115VAC at full load		
INPUT	VOLTAGE RANGE Note.7	88 ~ 264VAC 124 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	0.93/230VAC 0.96/115VAC at full load		
	EFFICIENCY (Typ.)	89%	91%	90.5%
	AC CURRENT (Typ.)	1.4A/115VAC 0.7A/230VAC		
	INRUSH CURRENT (Typ.)	35A/115VAC 70A/230VAC		
	LEAKAGE CURRENT	<1mA / 240VAC		
PROTECTION	OVERLOAD	Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage		
		>150% rated power, constant current limiting with auto-recovery within 3 seconds and shut down o/p voltage after 3 seconds		
	OVER VOLTAGE	14 ~ 17V	29 ~ 33V	56 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	95℃±5℃ (TSW : detect on heatsink of power switch)		
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load		
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH		
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A, SEMI F47, GL approved		
OTHERS	MTBF	289.9Khrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	40*125.2*113.5mm (W*H*D)		
	PACKING	0.67Kg; 20pcs/14.4Kg/1.16CUFT		

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.
6. 3 seconds max., please refer to peak loading curves.
7. Derating may be needed under low input voltage. Please check the derating curve for more details.

■ Mechanical Specification

Case No.992A Unit:mm



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

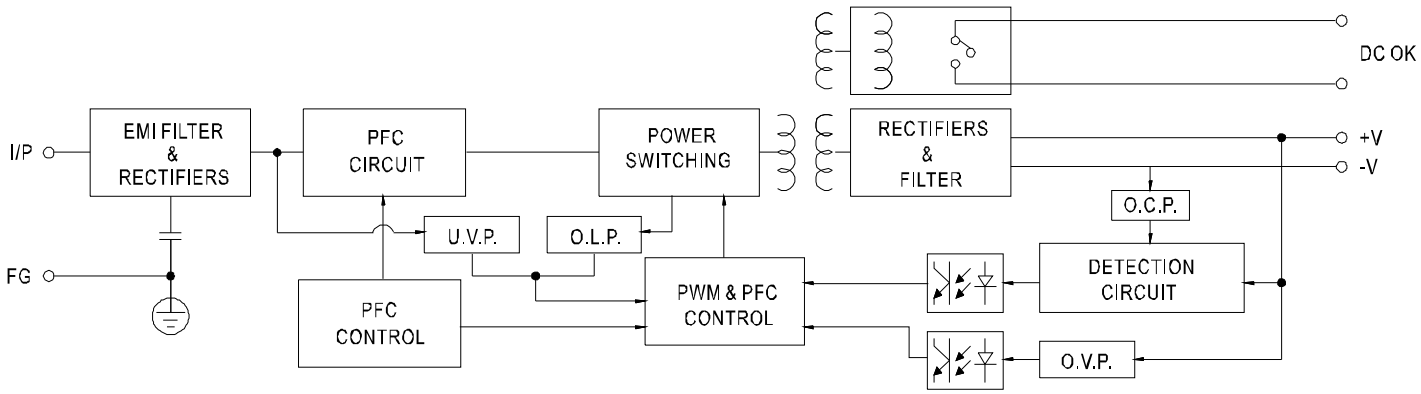
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	Relay Contact
3	DC OUTPUT -V
4	DC OUTPUT+V

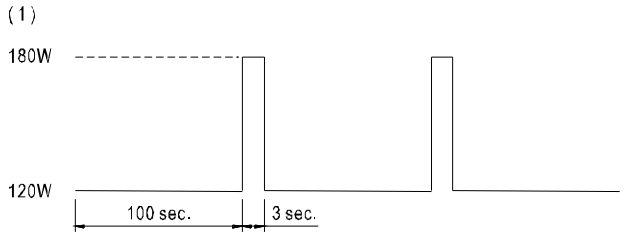
■ Block Diagram

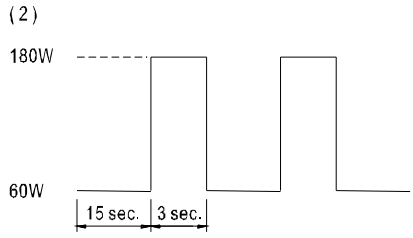


■ DC OK Relay Contact

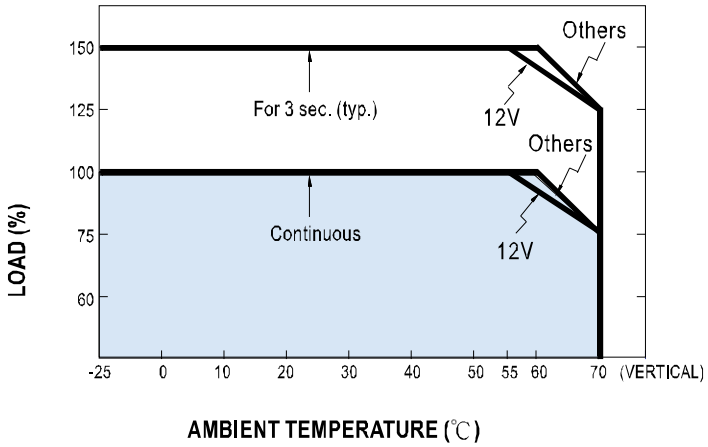
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Peak Loading

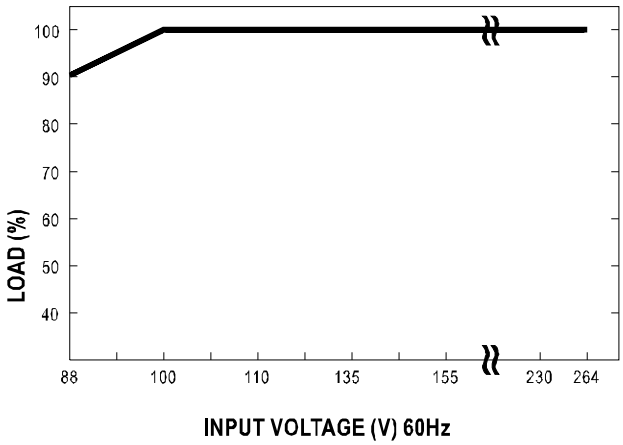




■ Derating Curve



■ Output derating VS input voltage



NIETZ 240W Single Output Industrial DIN RAIL with PFC Function SDR-240 series

Features :

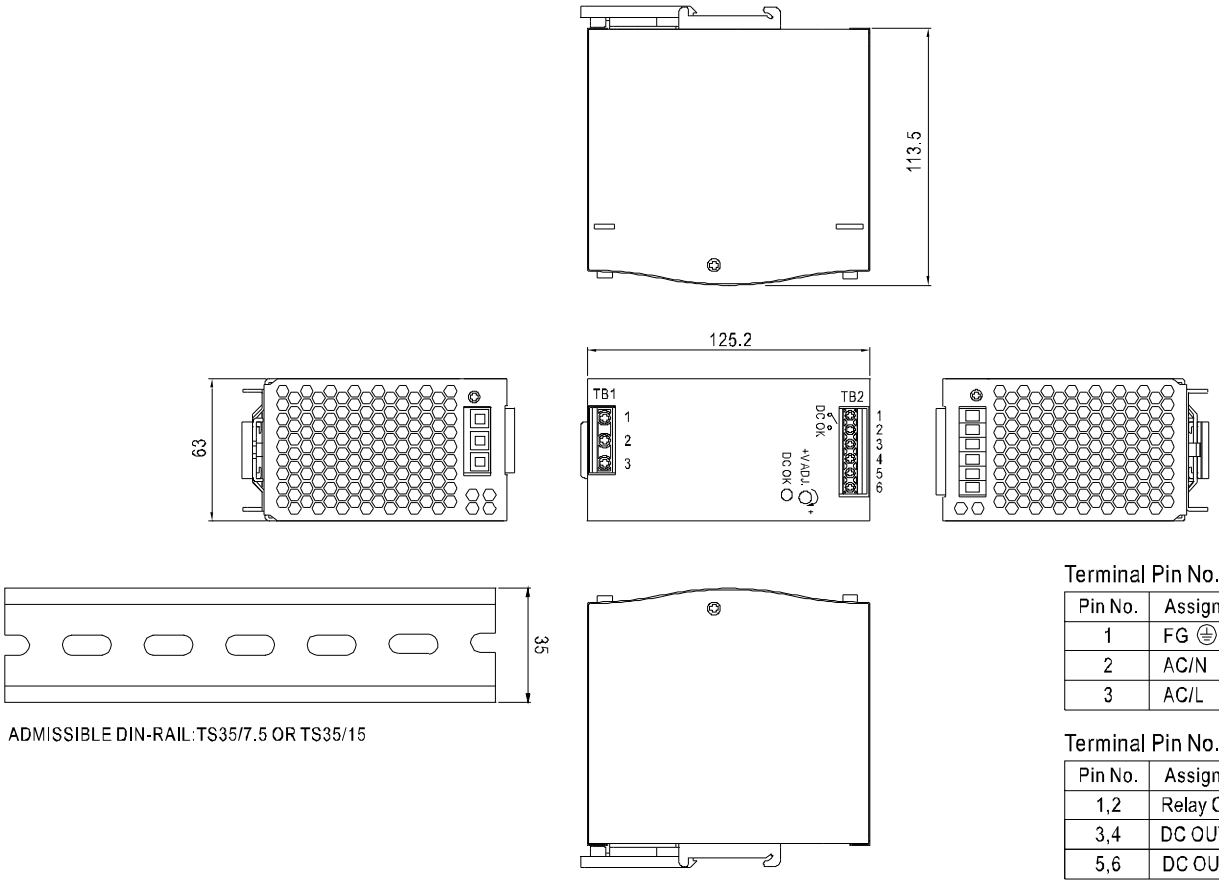
- High efficiency 94% and low power dissipation
- 150% peak load capability
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test

SPECIFICATION

MODEL		SDR-240-24	SDR-240-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	PEAK CURRENT	15A	7.5A
	PEAK POWER Note.6	360W (3sec.)	
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	1500ms, 60ms/230VAC 3000ms, 60ms/115VAC at full load	
	HOLD UP TIME (Typ.)	20ms/230VAC 20ms/115VAC at full load	
INPUT	VOLTAGE RANGE	88 ~ 264VAC 124 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	0.93/230VAC 0.99/115VAC at full load	
	EFFICIENCY (Typ.) Note.8	94%	
	AC CURRENT (Typ.)	2.6A/115VAC 1.3A/230VAC	
	INRUSH CURRENT (Typ.)	33A/115VAC 65A/230VAC	
	LEAKAGE CURRENT	<1mA / 240VAC	
PROTECTION	OVERLOAD	Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery	
		>150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds	
	OVER VOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery	
	OVER TEMPERATURE	95℃ ±5℃ (TSW : detect on heatsink of power switch)	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load	
ENVIRONMENT	WORKING TEMP. Note.5	-25 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH	
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A, SEMI F47, GL approved	
OTHERS	MTBF	169.3Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	63*125.2*113.5mm (W*H*D)	
	PACKING	1.03Kg; 12pcs/13.4Kg/1.06CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended. 6. 3 seconds max., please refer to peak loading curves. 7. Derating may be needed under low input voltage. Please check the derating curve for more details. 8. After 30 minutes of burn-in.		

■ Mechanical Specification

Case No. 979A Unit:mm



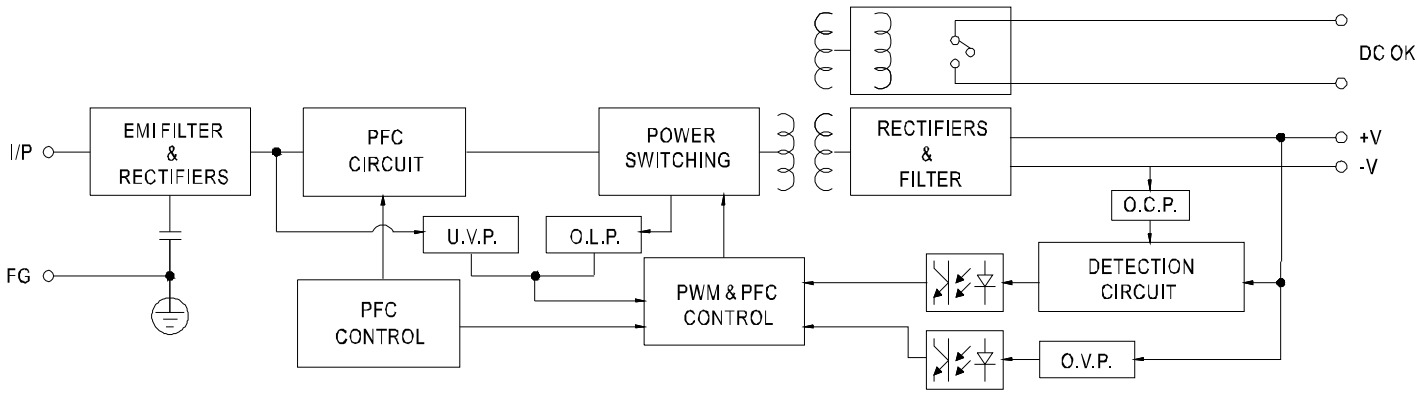
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT +V
5,6	DC OUTPUT -V

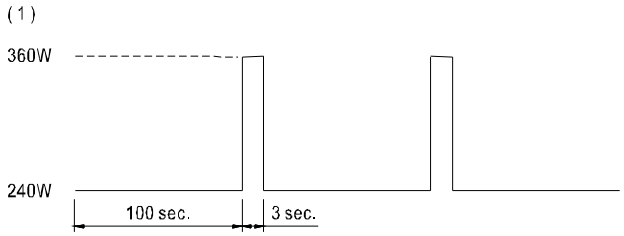
■ Block Diagram

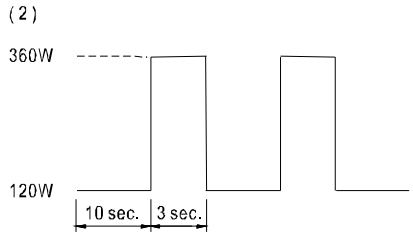


■ DC OK Relay Contact

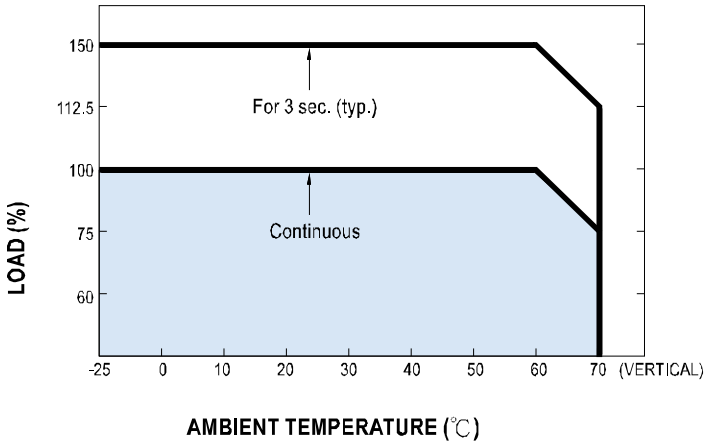
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Peak Loading

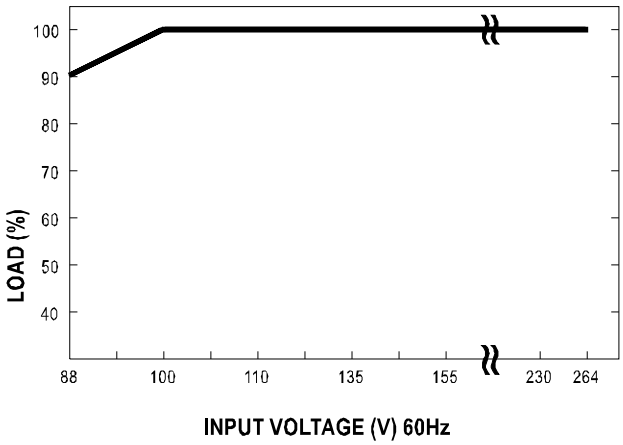




■ Derating Curve



■ Output derating VS input voltage



NIETZ 480W Single Output Industrial DIN RAIL with PFC Function SDR-480 series

Features :

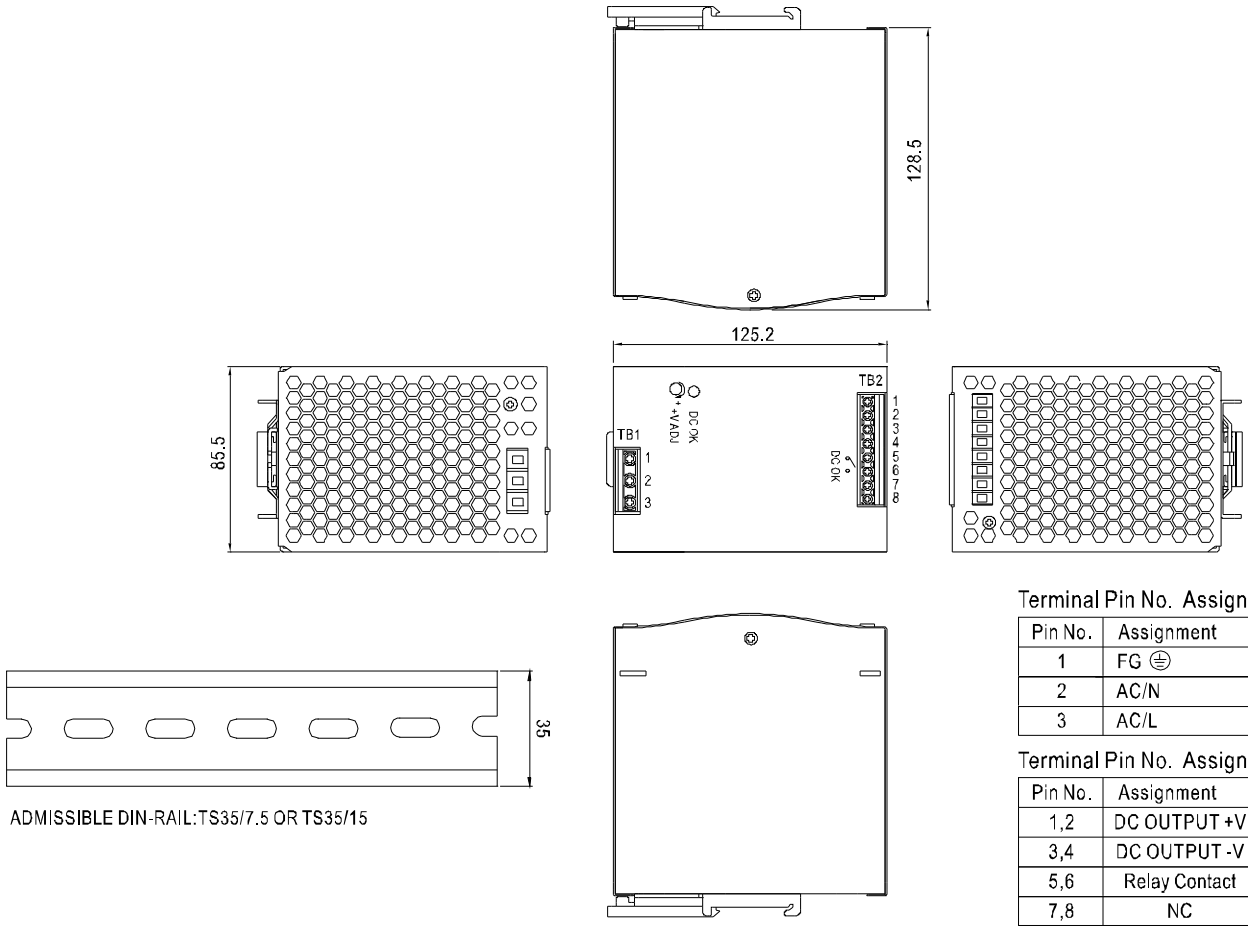
- High efficiency 94% and low power dissipation
- 150% peak load capability
- Built-in active PFC function, PF>0.94
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test
- 150% peak load capability

SPECIFICATION

MODEL		SDR-480-24	SDR-480-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	PEAK CURRENT	30A	15A
	PEAK POWER Note.6	720W (3sec.)	
	RIPPLE & NOISE (max.) Note.2	100mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.2%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	1500ms, 150ms/230VAC 3000ms, 150ms/115VAC at full load	
	HOLD UP TIME (Typ.)	14ms/230VAC at full load	
INPUT	VOLTAGE RANGE Note.7	90 ~ 264VAC 127 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	0.94/230VAC 0.99/115VAC at full load	
	EFFICIENCY (Typ.)	94%	
	AC CURRENT (Typ.)	5A/115VAC 2.5A/230VAC	
	INRUSH CURRENT (Typ.)	40A/115VAC 80A/230VAC	
	LEAKAGE CURRENT	<0.8mA / 240VAC	
PROTECTION	OVERLOAD	Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery	
		>150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds	
	OVER VOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery	
	OVER TEMPERATURE	105℃ ±5℃ (TSW : detect on heatsink of power switch)	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load	
ENVIRONMENT	WORKING TEMP. Note.5	-25 ~ +70℃ (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃/ 70% RH	
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A, SEMI F47, GL approved	
OTHERS	MTBF	112.9Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	85.5*125.2*128.5mm (W*H*D)	
	PACKING	1.6Kg; 8pcs/13.8Kg/0.9CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended. 6. 3 seconds peak power max. and the average output power should not exceed the rate power. 7. Derating may be needed under low input voltage. Please check the derating curve for more details.	

■ Mechanical Specification

Case No.984A Unit:mm



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

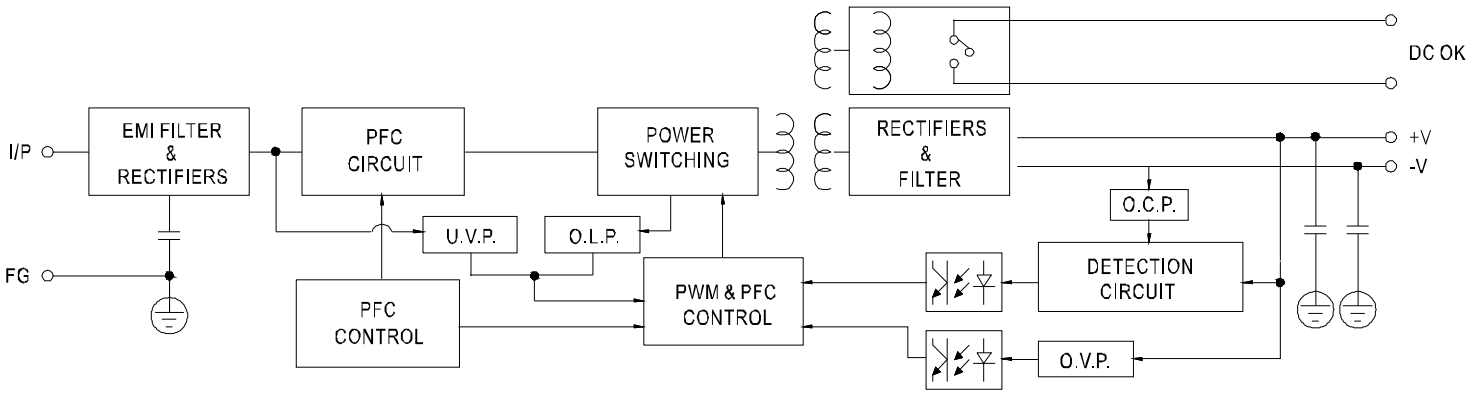
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7,8	NC

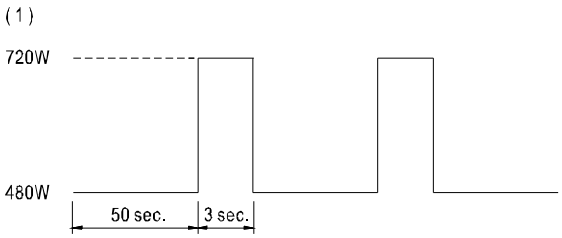
■ Block Diagram

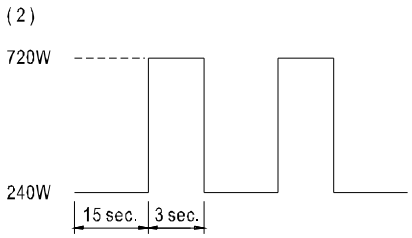


■ DC OK Relay Contact

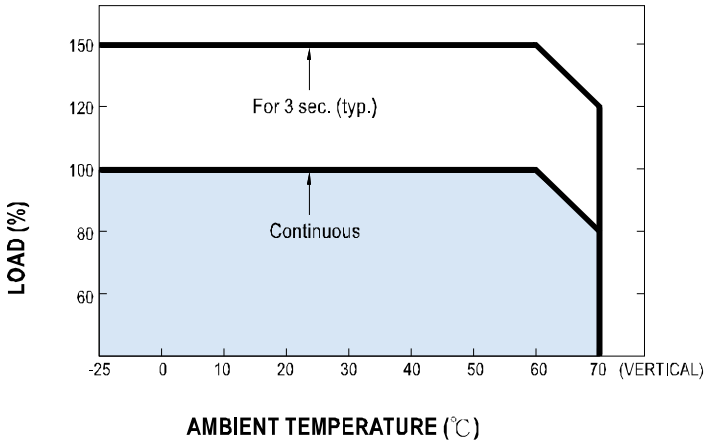
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Peak Loading

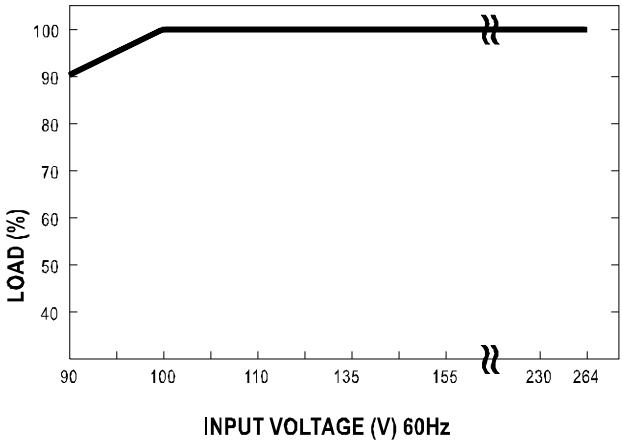




■ Derating Curve



■ Output derating VS input voltage



NIETZ 200W Single Output Switching Power Supply **SE-200 series**

■ Features :

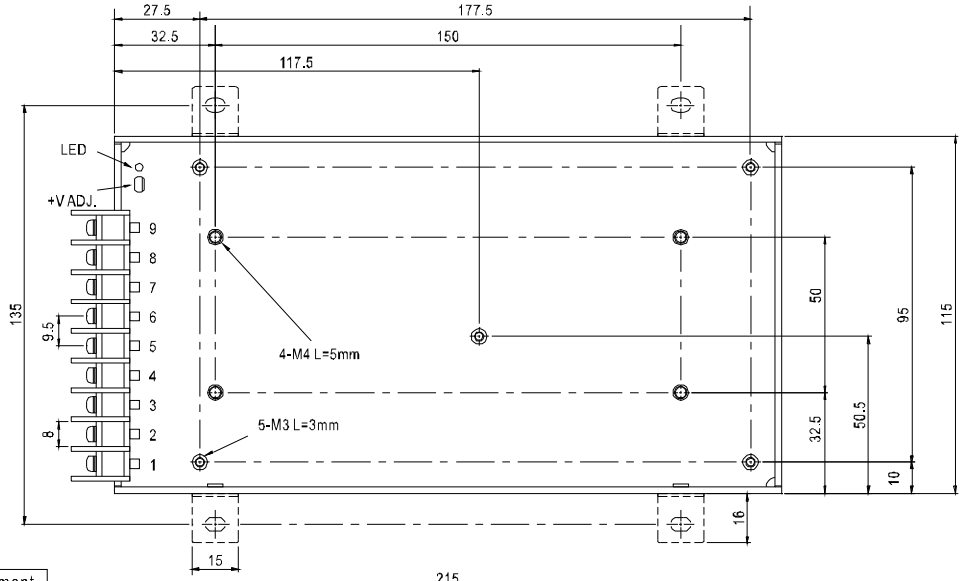
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Cooling by free air convection
- Withstand 300vac surge input for 5 second
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indicator for power on
- Fixed switching frequency at 90KHz
- Low cost,high reliability

SPECIFICATION

MODEL		SE-200-3.3	SE-200-5	SE-200-7.5	SE-200-12	SE-200-15	SE-200-24	SE-200-27	SE-200-36	SE-200-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	40A	40A	27A	17A	14A	8.8A	7.8A	5.9A	4.4A
	CURRENT RANGE	0 ~ 40A	0 ~ 40A	0 ~ 27A	0 ~ 17A	0 ~ 14A	0 ~ 8.8A	0 ~ 7.8A	0 ~ 5.9A	0 ~ 4.4A
	RATED POWER	132W	200W	202.5W	204W	210W	211.2W	210.6W	212.4W	211.2W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.7V	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.5V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	32 ~ 40V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.5%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load								
	HOLD UP TIME	20ms/230VAC 16ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY (Typ.)	75%	79%	82%	85%	85%	87%	88%	89%	89%
	AC CURRENT	4.5A/115VAC 2.5A/230VAC								
	INRUSH CURRENT (max.)	40A/115VAC 55A/230VAC								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVER LOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.8 ~ 4.9V	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	41.4 ~ 46.8V	57.6 ~ 67.2V
		Protection type :Shut down O/P voltage, re-power on to recover								
	OVER TEMPERATURE	95℃±5℃(3.3V);100℃±5℃(5V); 90℃±5℃(7.5V);85℃±5℃(12~24V);80℃±5℃(27~36V);75℃±5℃(48V) (TSW1) Detect on case								
		Protection type : Shut down O/P voltage, recovers automatically after temperature goes down								
ENVIRONMENT	WORKING TEMP.	-20 ~ +50℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH								
	EMI CONDUCTION & RADIATION	Design refer to EN55022 (CISPR22) Class A								
	EMS IMMUNITY	Design refer to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, light industry level, criteria A								
OTHERS	MTBF	271.9K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	215*115*50mm (L*W*H)								
	PACKING	0.93Kg; 12pcs/12Kg/0.92CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.									

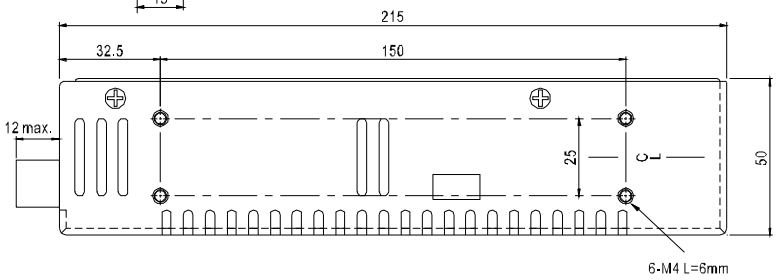
■ Mechanical Specification

Case No. 912E Unit:mm



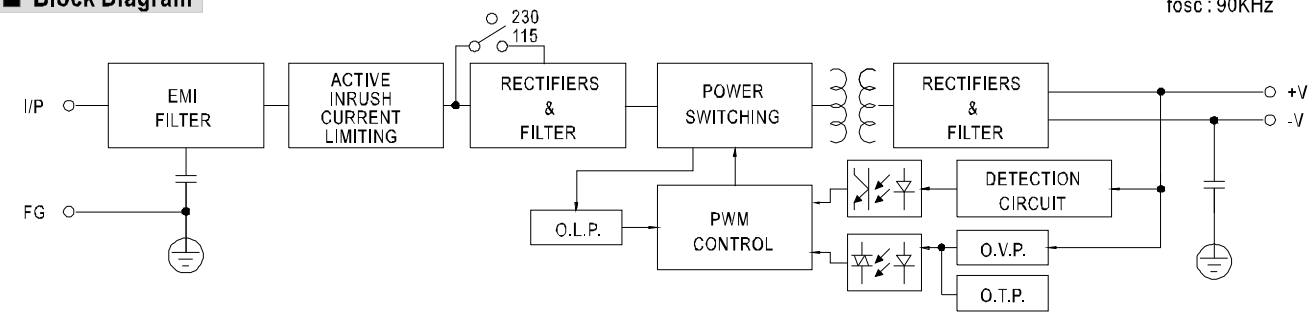
Terminal pin number assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

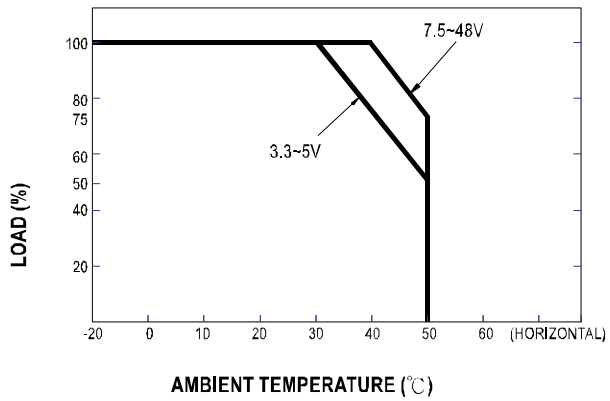


■ Block Diagram

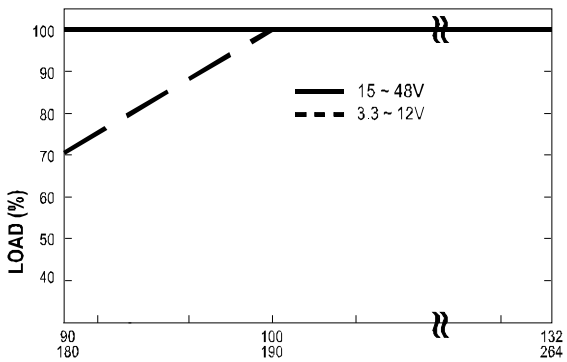
fosc : 90KHz



■ Derating Curve



■ Static Characteristics



NIETZ 350W Single Output Switching Power Supply SE-350 series

Features :

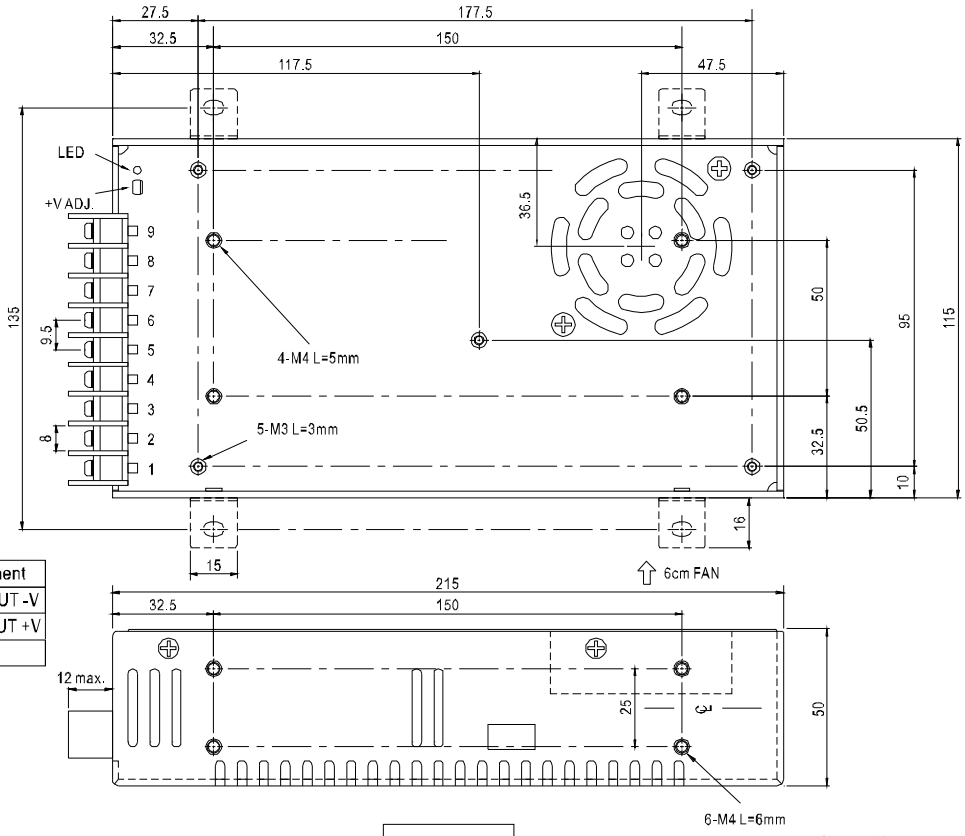
- AC input range selectable by switch
- Protections: Short circuit / Overload / Over voltage/ Over temperature
- Forced air cooling by built-in DC fan
- Withstand 300vac surge input for 5 second
- Built-in cooling Fan ON-OFF control
- Built-in constant current limiting circuit
- 100% full load burn-in test
- LED indicator for power on
- Fixed switching frequency at 90KHz
- Low cost,high reliability

SPECIFICATION

MODEL		SE-350-3.3	SE-350-5	SE-350-7.5	SE-350-12	SE-350-15	SE-350-24	SE-350-27	SE-350-36	SE-350-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	60A	60A	46A	29A	23.2A	14.6A	13A	9.7A	7.3A
	CURRENT RANGE	0 ~ 60A	0 ~ 60A	0 ~ 46A	0 ~ 29A	0 ~ 23.2A	0 ~ 14.6A	0 ~ 13A	0 ~ 9.7A	0 ~ 7.3A
	RATED POWER	198W	300W	345W	348W	348W	350.4W	351W	349.2W	350.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	240mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.7V	4.5 ~ 5.6V	6 ~ 9V	10 ~ 13.5V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 32V	32~40V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±4.5%	±2.0%	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.5%	±2.0%	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load								
	HOLD UP TIME (Typ.)	20ms/230VAC 16ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 254 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY (Typ.)	74%	78%	80%	83%	84%	87%	88%	87.5%	87.5%
	AC CURRENT (Typ.)	7A/115VAC 4A/230VAC								
	INRUSH CURRENT (Typ.)	40A/115VAC 60A/230VAC								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVER LOAD	105 ~ 135% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.8 ~ 4.6V	5.75 ~ 7.5V	9.4 ~ 11.25V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	41.4~46.8V	57.6 ~ 67.2V
		Protection type :Shut down O/P voltage, re-power on to recover								
	OVER TEMPERATURE	85℃±5℃(3.3~7.5V); 80℃±5℃(12V); 75℃±5℃(15~48V) (TSW1) Detect on case								
		Protection type : Shut down O/P voltage, recovers automatically after temperature goes down								
FUNCTION	FAN ON/OFF CONTROL(Typ.)	RTH2≧50℃ FAN ON, ≦45℃ FAN OFF (3.3 ~ 7.5V)								
		RTH2≧55℃ FAN ON, ≦50℃ FAN OFF (12 ~ 48V)								
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃ / 70% RH								
	EMI CONDUCTION & RADIATION	Design refer to EN55022 (CISPR22) Class A								
	EMS IMMUNITY	Design refer to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, light industry level, criteria A								
OTHERS	MTBF	234.3K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	215*115*50mm (L*W*H)								
	PACKING	1.07Kg; 12pcs/13.5Kg/0.92CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.									

■ Mechanical Specification

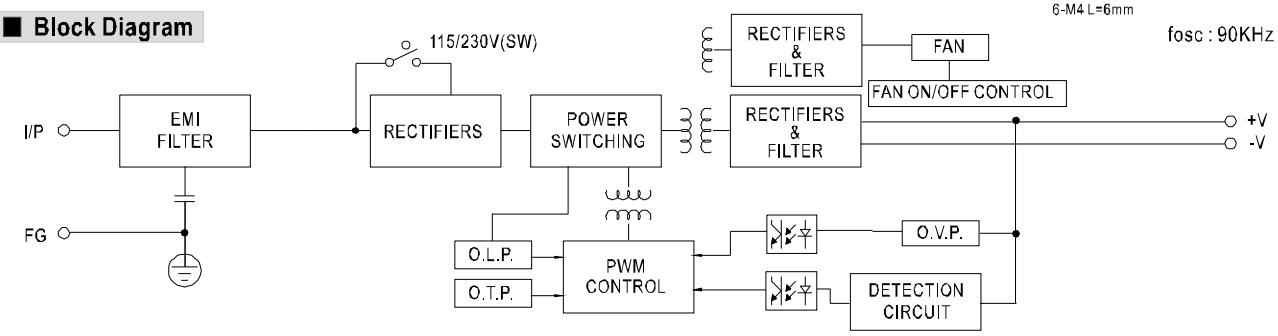
Case No. 912C Unit:mm



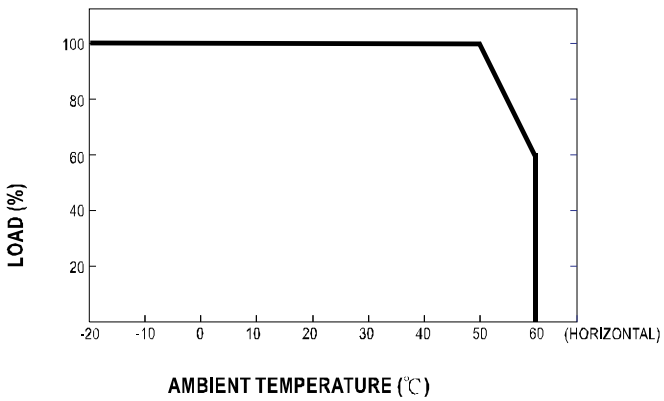
Terminal Pin No. assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

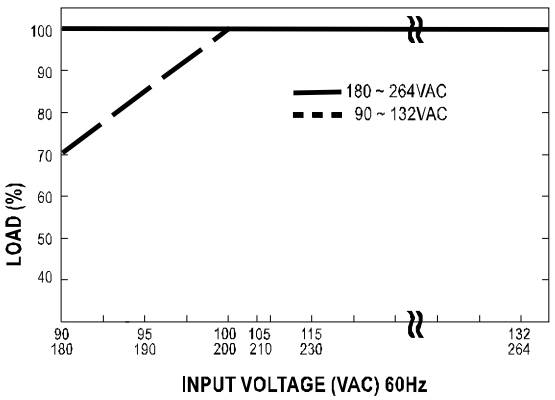
■ Block Diagram



■ Derating Curve



■ Static Characteristics



NIETZ 600W Single Output Power Supply **SE-600 series**

■ Features :

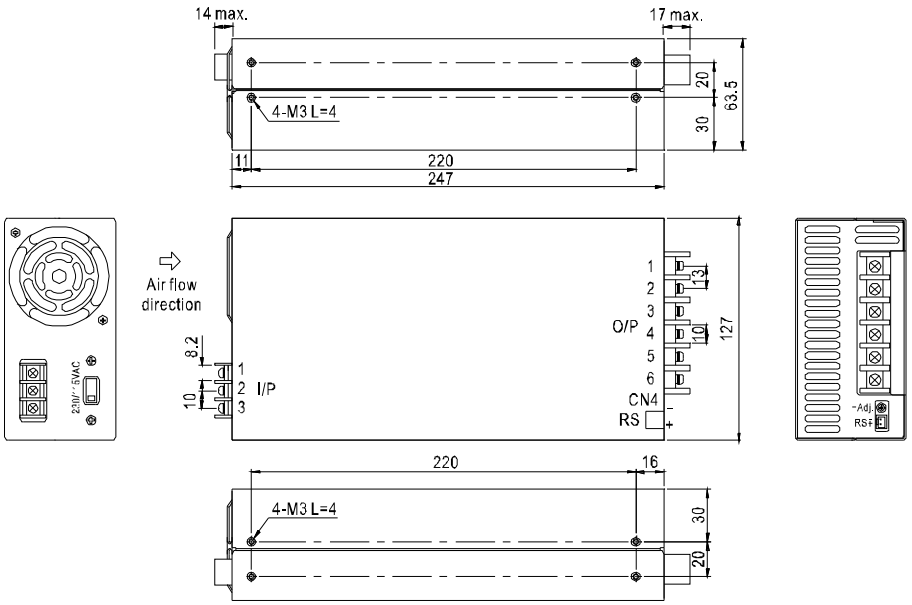
- AC input active surge current limiting
- AC input range selected by switch
- Protections:Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- High power density 4.9w/inch^3
- Built-in remote sense function
- UL approved
- Low cost

SPECIFICATION

MODEL		SE-600-5	SE-600-12	SE-600-15	SE-600-24	SE-600-27	SE-600-36	SE-600-48
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	27V	36V	48V
	RATED CURRENT	100A	50A	40A	25A	22.2A	16.6A	12.5A
	CURRENT RANGE	0 ~ 100A	0 ~ 50A	0 ~ 40A	0 ~ 25A	0 ~ 22.2A	0 ~ 16.6A	0 ~ 12.5A
	RATED POWER	500W	600W	600W	600W	599.4W	597.6W	600W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10 ~ 13.5V	13.5 ~ 16.5V	22 ~ 26.4V	24 ~ 30V	32 ~ 40V	43 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1000ms, 50ms/230VAC 1000ms, 50ms/115VAC at full load						
	HOLD UP TIME (Typ.)	20ms/230VAC 16ms/115VAC at full load						
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC selected by switch 254 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	EFFICIENCY (Typ.)	78%	83%	84%	87%	87%	87%	88%
	AC CURRENT (Typ.)	12A/115VAC 7.5A/230VAC						
	INRUSH CURRENT (Typ.)	30A/115VAC 60A/230VAC						
	LEAKAGE CURRENT	<2.0mA / 240VAC						
PROTECTION	OVERLOAD	105 ~ 125% rated output power						
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER VOLTAGE	5.75 ~ 6.3V	13.8 ~ 16.2V	18 ~ 21V	27.6 ~ 32.4V	31 ~ 36.5V	42 ~ 50V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER TEMPERATURE	85℃±5℃ (TSW1) detect on heatsink of power transistor						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes						
SAFETY	SAFETY STANDARDS	UL60950-1 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH						
OTHERS	MTBF	197K hrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	247*127*63.5mm (L*W*H)						
	PACKING	2.1Kg; 6pcs/13.4Kg/1.03CUFT						
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.							

■ Mechanical Specification

Case No. 926A Unit:mm



AC input terminal :

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

DC Output terminal :

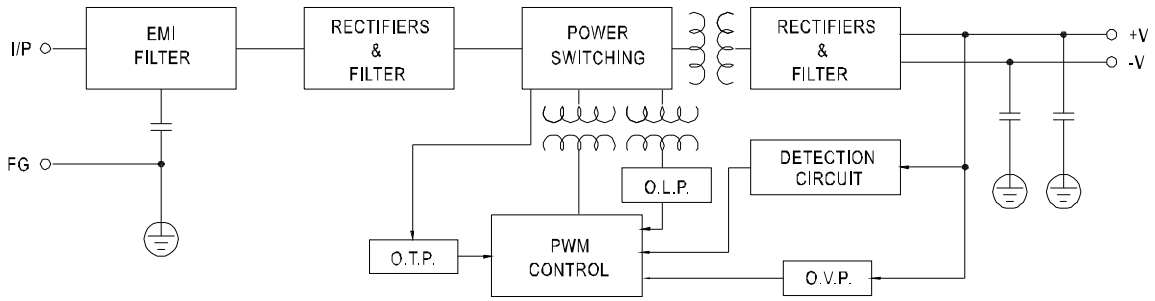
Pin No.	Assignment
1~3	+V
4~6	-V

RS Connector (CN4) : JST B-XH or equivalent

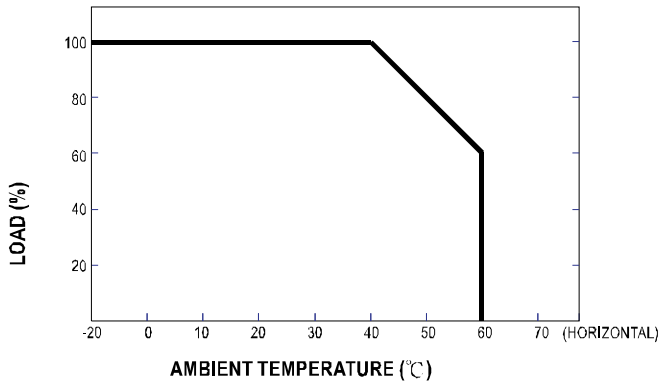
Pin No.	Assignment	Mating Housing	Terminal
1	+S	JST XHP or equivalent	JST SXH-001T or equivalent
2	-S		

■ Block Diagram

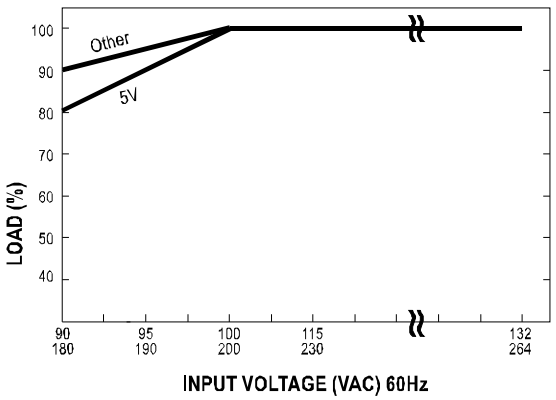
fosc : 68KHz



■ Derating Curve



■ Static Characteristics



NIETZ 1000W Single Output Power Supply SE-1000 series

■ Features :

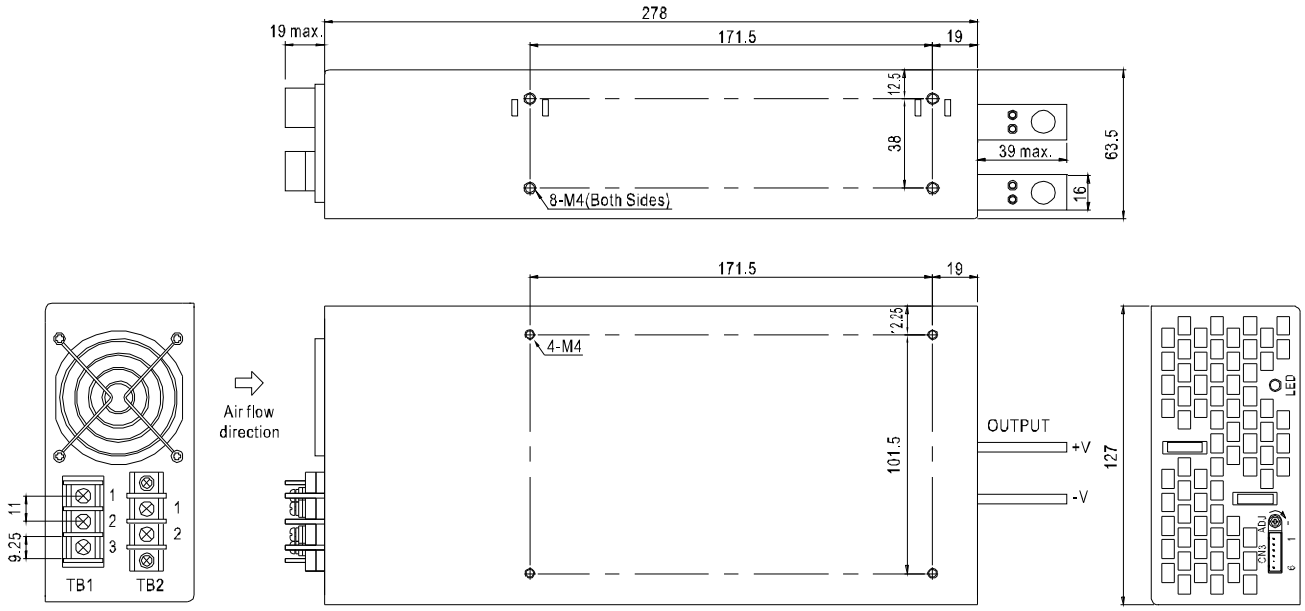
- AC input active surge current limiting
- AC input range selected by switch
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC ball bearing fan
- High power density 7.3w/inch^3
- With DC_OK signal output
- Built-in remote ON-OFF control
- Built-in remote sense function
- UL / CUL approved
- Low cost

SPECIFICATION

MODEL		SE-1000-5	SE-1000-9	SE-1000-12	SE-1000-15	SE-1000-24	SE-1000-48
OUTPUT	DC VOLTAGE	5V	9V	12V	15V	24V	48V
	RATED CURRENT	150A	100A	83.3A	66.7A	41.7A	20.8A
	CURRENT RANGE	0 ~ 150A	0 ~ 100A	0 ~ 83.3A	0 ~ 66.7A	0 ~ 41.7A	0 ~ 20.8A
	RATED POWER	750W	900W	999.6W	1000.5W	1000.8W	998.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	3.3 ~ 5.5V	7.5 ~ 10V	10 ~ 13.5V	13.5 ~ 16.5V	22 ~ 27.5V	43 ~ 56V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1500ms, 50ms/230VAC 1500ms, 50ms/115VAC at full load					
	HOLD UP TIME (Typ.)	20ms/230VAC 15ms/115VAC at full load					
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC selected by TB2 254 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY (Typ.)	81%	84%	85%	86%	88%	89%
	AC CURRENT (Typ.)	17.5A/115VAC 10A/230VAC					
	INRUSH CURRENT (Typ.)	35A/115VAC 55A/230VAC					
	LEAKAGE CURRENT	<2.5mA / 240VAC					
PROTECTION	OVERLOAD	105 ~ 125% rated output power					
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER VOLTAGE	5.75 ~ 6.3V	10.4 ~ 12.2V	13.8 ~ 16.2V	18 ~ 21V	28 ~ 32.4V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	70℃ ±5℃ (TSW1) detect on heatsink of power transistor					
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down					
FUNCTION	DC_OK SIGNAL	PSU turn on:3.3V ~ 5.6V PUS turn off:0 ~ 1V					
	REMOTE CONTROL	RC+/RC-: 0 ~ 0.8V power on; 4 ~ 10V power off					
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY	SAFETY STANDARDS	UL60950-1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
OTHERS	MTBF	251.6K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	278*127*63.5mm (L*W*H)					
	PACKING	2.5Kg; 6pcs/16Kg/1.38CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. By using UVP circuit, PSU will not turn on direct by in AC continue ON/OFF condition within 5 sec.						

■ Mechanical Specification

Case No. 935B Unit:mm



TB1:AC input terminal

Pin No.	Assignment
1	AC/L
2	AC/N
3	FG ⏚

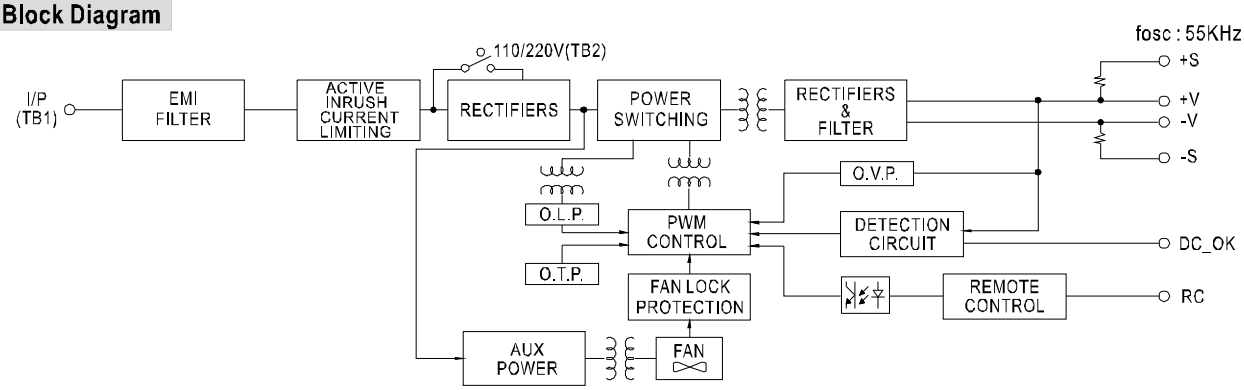
TB2:110/220V Change

Pin No.	110V	220V
1	Short	Open
2		

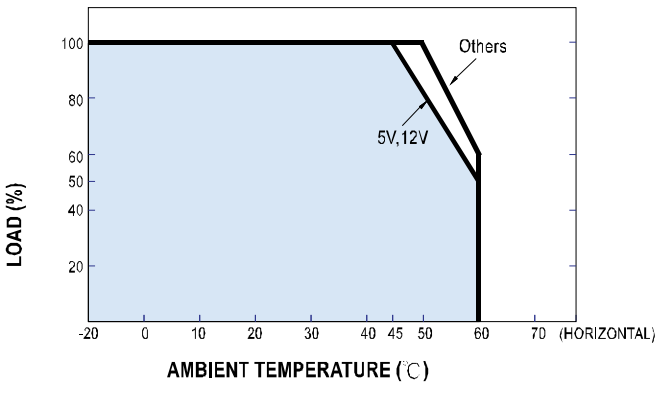
Control Pin (CN3) : JST B6B-XH or equivalent

Pin No.	Assignment	Pin No.	Assignment	Mating Housing	Terminal
1	DC_OK Signal	4	+S	JST XHP or equivalent	JST SXH-001T or equivalent
2	DC_OK GND	5	RC-		
3	-S	6	RC+		

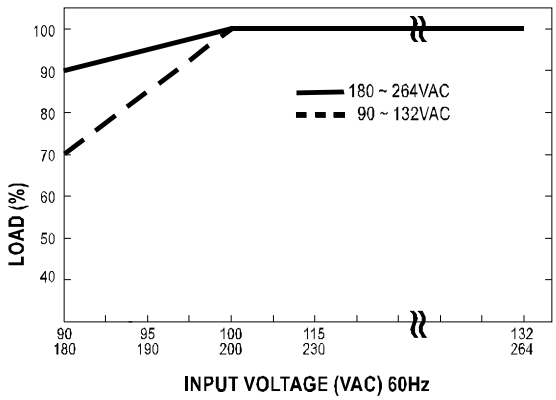
■ Block Diagram



■ Derating Curve



■ Static Characteristics



SE-1500 single output power supply series parameters

Electrical Specifications

Product model：12V-48V		SE-1500-12	SE-1500-15	SE-1500-24	SE-1500-36	SE-1500-48
Output	DC voltage	12V	15V	24V	36V	48V
	Rated current	125A	100A	62.5A	42A	31.5A
	Current range	0 ~125A	0 ~100A	0 ~62.5A	0 ~42A	0 ~31.5A
	Rated power	1500W	1500W	1500W	1500W	1500W
	Ripple and noise	150mVp-p	150mVp-p	150mVp-p	200mVp-p	300mVp-p
	Voltage adjustment range	10.8 ~ 13.2V	13.5 ~ 16.5V	22 ~ 27V	32 ~ 39V	45 ~ 53V
	Voltage accuracy	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	Linear adjustment rate	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Load adjustment rate	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%

Product model：60V-200V		SE-1500-60	SE-1500-72	SE-1500-80	SE-1500-110	SE-1500-200
Output	DC voltage	60V	72V	80V	110V	200V
	Rated current	25A	21A	18.7A	13.7A	7.5A
	Current range	0 ~25A	0 ~21A	0 ~18.7A	0 ~18.7A	0 ~7.5A
	Rated power	1500W	1500W	1500W	1500W	1500W
	Ripple and noise	150mVp-p	150mVp-p	150mVp-p	200mVp-p	300mVp-p
	Voltage adjustment range	10.8 ~ 13.2V	13.5 ~ 16.5V	22 ~ 27V	32 ~ 39V	45 ~ 53V
	Voltage accuracy	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	Linear adjustment rate	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Load adjustment rate	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%

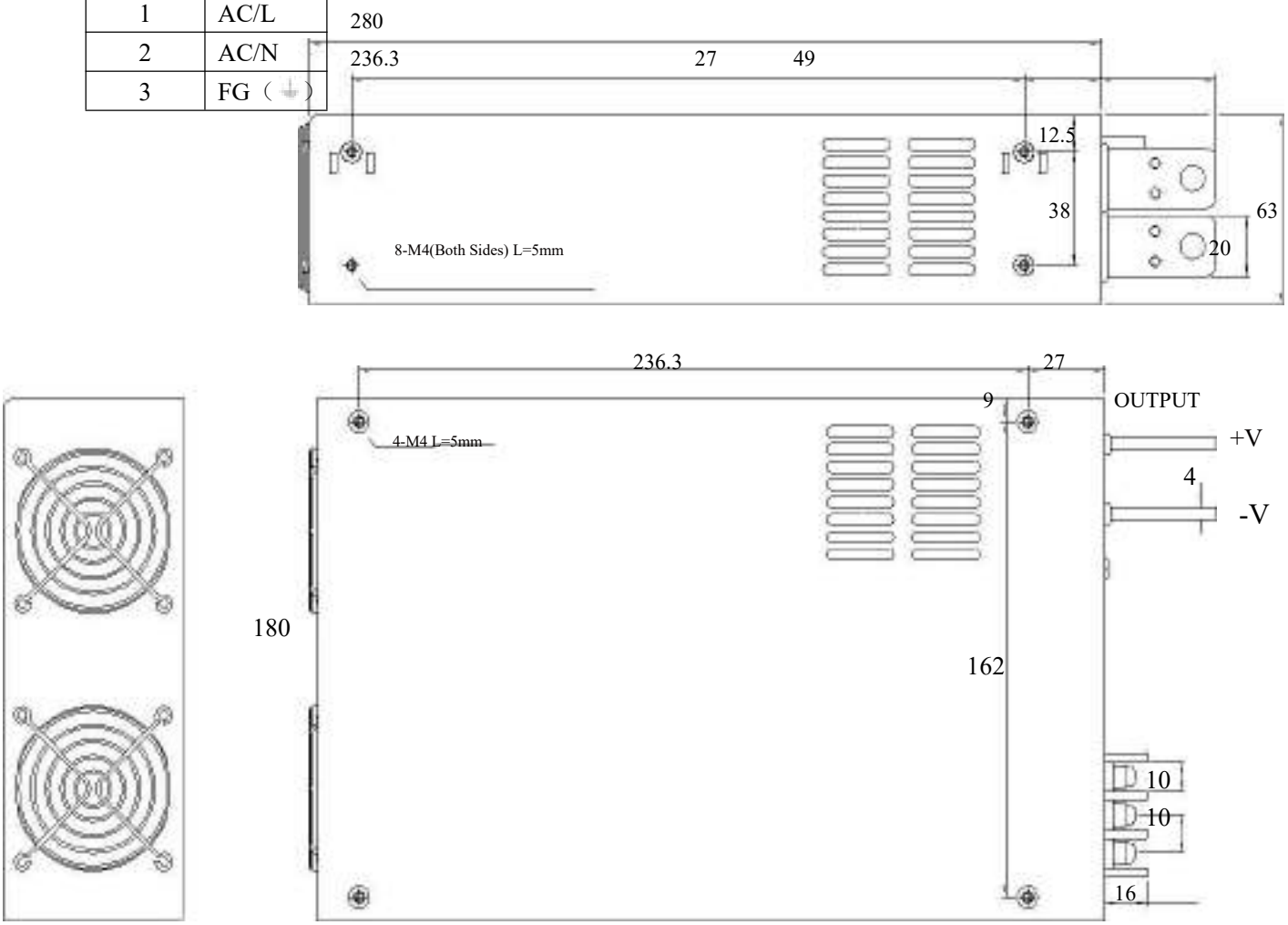
Time	Start, rise time	＜1000ms, 80ms（Full load）				
	Hold time (Typ.)	10ms(When fully loaded)				
Input	voltage range	180 ~ 264VAC or 254 ~ 370VDC				
	Frequency Range	47 ~ 63Hz				
	Power factor (Typ.)	0.75/230V(When fully loaded)				
	Efficiency (Typ.) ≤	85%	87%	89%	90%	91%
	AC current (Typ.)	17A/180VAC 12A/230VAC				
	Inrush current	Soft starter 10A230VAC				

	(Typ.)					
	Leakage current	<3.5mA / 240VAC				
Protection	Overload	Rated output 100 ~ 105%				
		The user can continuously adjust the output current constant current or over current protection mode through the analog voltage signal. The current constant voltage linear ratio drops to zero				
	Overvoltage	Protection type Turn off output output voltage and recover after restart				
		13.5 ~ 14.8V	16.5 ~ 17.8V	27.5 ~ 28.8V	40 ~ 41.8V	53.5 ~54.8V
	Over temperature	85℃±5℃ Power transistor heat sink detection		105℃±5℃ Detection on power diode radiator		
		Protection type Turn off the output voltage and automatically recover after temperature drops				
Function	Remote control	Please refer to the function manual				
	Auxiliary power	13.7V 0.5A can be used for controller power supply				
	Output voltage control	Use 0 ~ 5V analog signal or MCU SPWM control output voltage 0 ~ rated maximum output voltage, continuously adjustable				
	Output current control	Use 0 ~ 5V analog signal or MCU SPWM control output current 5 ~ rated maximum output voltage, continuously adjustable				
	Parallel current sharing	Please refer to the function manual				
Environment	Operating temperature	-20 ~ 70℃				
	Working humidity	20 ~ 90%RH non-condensing				
	Temperature Coefficient	±0.05%/℃ (0~50℃)				
	Vibration resistant	10 ~ 500Hz, 2G 10 minutes/cycle, X, Y, Z axis each 60 minutes				
Safety regulations and electromagnetic compatibility	safety regulations	UL60950-1				
	Withstand voltage	I/P-O/P:3KVACI/P-FG:1.5KVAC O/P-FG:0.5KVAC				
	Insulation resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH				
	Size	280*180*63(L*W*H)				
Note	1. Unless otherwise specified, all specifications and parameters are measured in an environment where the input is 230VAC and the rated load is 25°. 2. Ripple and noise test method: use a 12² double wire, and connect 0.1uf and 47uf capacitors in parallel at the terminal, and measure under the bandwidth of 20MHZ 3. Accuracy includes setting error, linear adjustment rate and load adjustment rate					

Mechanism size

Unit mm

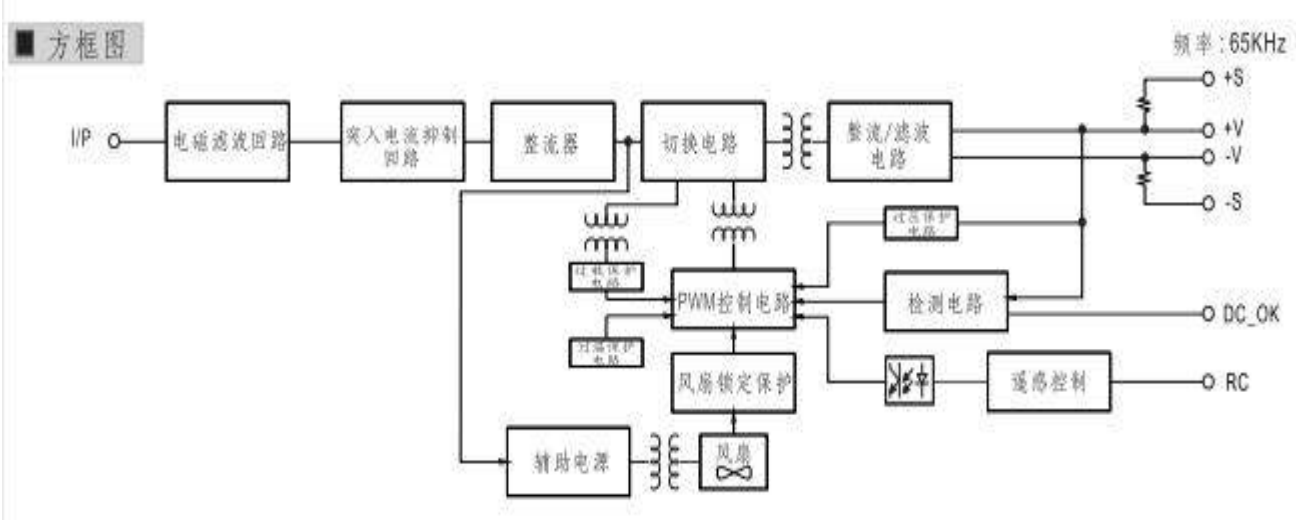
Pin	Pin function
1	AC/L
2	AC/N
3	FG（⏚）



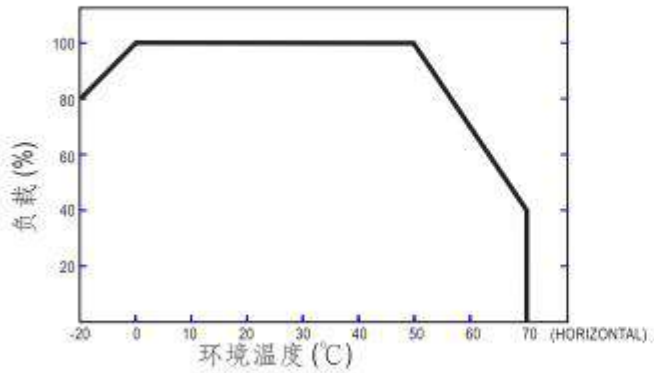
Input terminal pin layout

Working structure diagram:

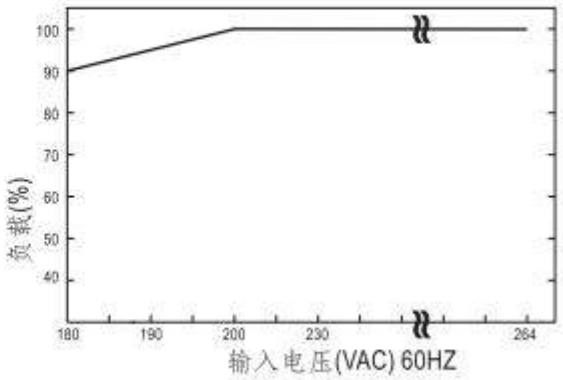
■ 方框图



■ 减额曲线



■ 静态特性曲线



Parallel output:

(1) The wiring mode of parallel output operation is as follows (+S, -S and CS are connected in parallel)

(2) The voltage difference between the parallel units should be less than ±2%

(3) Each output value shall not exceed the following formula

Parallel output current = rated current (unit) × number of parallel units × 0.9

(4) A maximum of 10 units can be connected in parallel, and more should be connected in parallel. Please separate control or contact the manufacturer

Interface definition:

CN1：Pin arrangement:

2	1

4	3
6	5
8	7

CN1 pin definition:

GND	PIN
GND	PIN
CV ADJ	OFF-PIN
CC ADJ	GND

CN2 Pin arrangement:

2	1
4	3
6	5
8	7

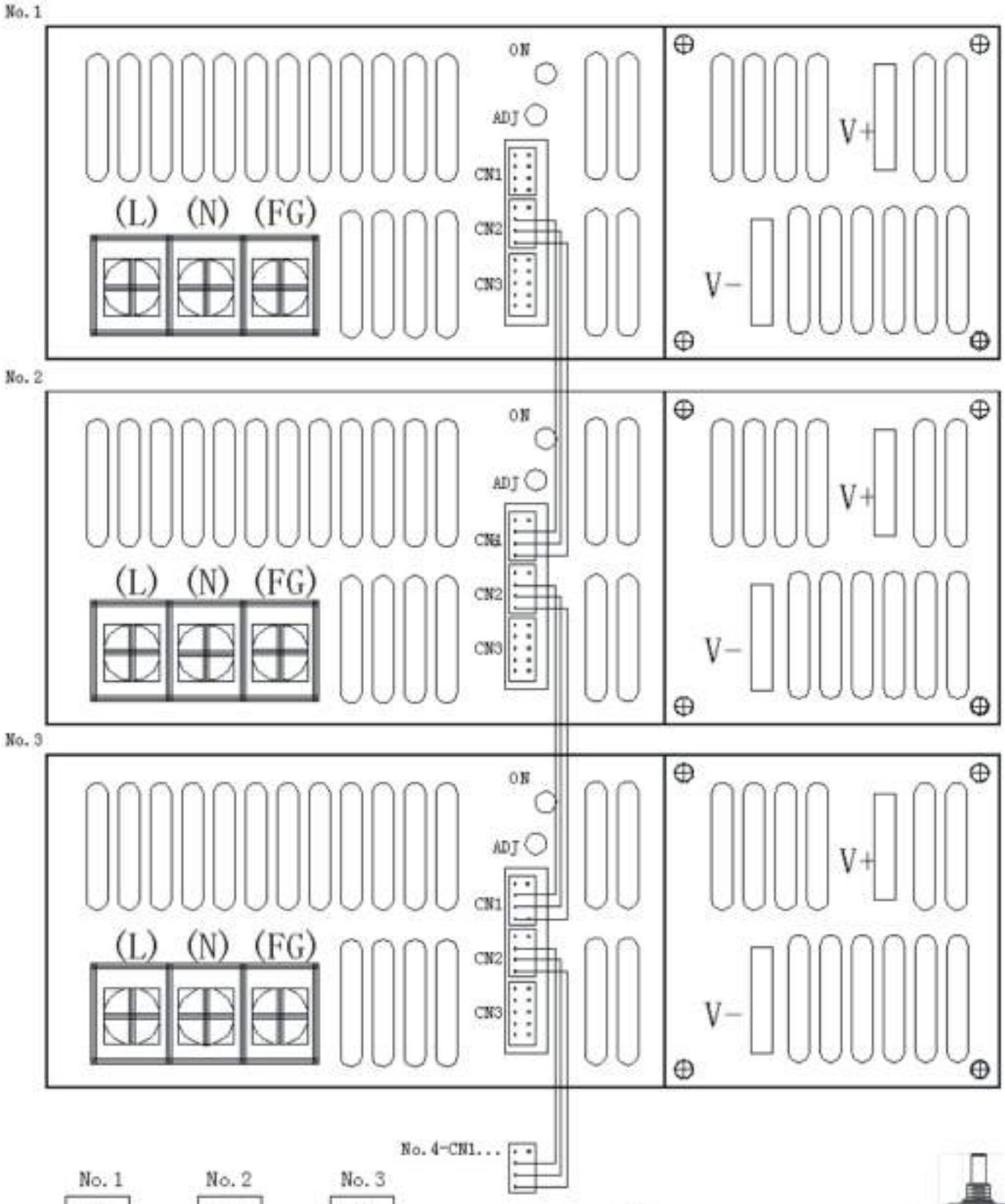
CN2 Pin definition:

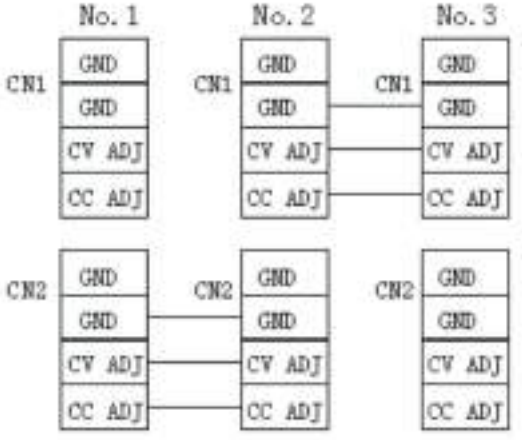
GND	PIN
GND	PIN
CV ADJ	OFF-PIN
CCADJ	GND

CN3 Pin arrangement:

2	1
4	3
6	5
8	7
10	9

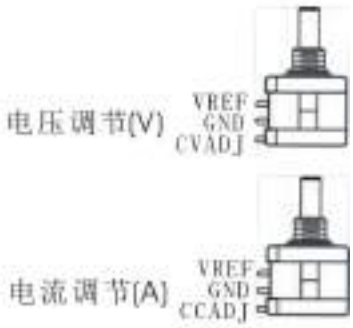
Parallel
diagram:





CN3

VDD	OFF-OUT
VDD	OFF-PIN
GND	GND
CV ADJ	VREF
CC ADJ	VREF



Output control method:

1. Direct power output: CN3 interface VDD and OFF-OUT short circuit

2. Voltage adjustment: see the potentiometer connection in the figure above, and disconnect VDD from OFF-OUT, and short-circuit CCADJ and VREF

3. Voltage adjustment: see the potentiometer connection in the figure above, and disconnect VDD from OFF-OUT, short-circuit CVADJ and VREF

4. Voltage and current adjustment: see the potentiometer connection in the figure above, and disconnect VDD from OFF-OUT.

5. Stop output: VDD and OFF-PIN short circuit to stop output

Output status indication:

1. Overcurrent protection

2. Overvoltage protection

3. Overheating protection red light

4. Working status green light

NIETZ 75W Single Output with PFC Function **SP-75 series**

■ Features :

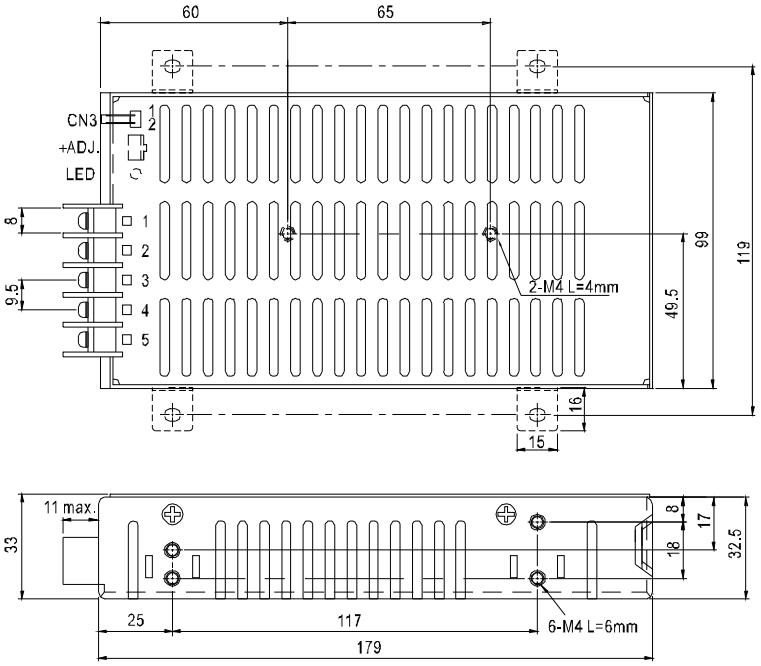
- Universal AC input / Full range
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage
- Built-in constant current limiting circuit
- Low profile: 33mm thickness
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at PFC:67KHz PWM:134KHz

SPECIFICATION

MODEL		SP-75-3.3	SP-75-5	SP-75-7.5	SP-75-12	SP-75-13.5	SP-75-15	SP-75-24	SP-75-27	SP-75-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	15A	15A	10A	6.3A	5.6A	5A	3.2A	2.8A	1.6A
	CURRENT RANGE	0 ~ 15A	0 ~ 15A	0 ~ 10A	0 ~ 6.3A	0 ~ 5.6A	0 ~ 5A	0 ~ 3.2A	0 ~ 2.8A	0 ~ 1.6A
	RATED POWER	49.5W	75W	75W	75.6W	75.6W	75W	76.8W	75.6W	76.8W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p	80mVp-p	80mVp-p	80mVp-p	80mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.9V	14.3 ~ 16.5V	22.8 ~ 26.4V	25.7 ~ 29.7V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	600ms, 60ms at full load								
	HOLD UP TIME (Typ.)	36ms at full load								
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC 120 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.93/230VAC 0.96/115VAC at full load								
	EFFICIENCY (Typ.)	68%	72%	74%	77%	78%	79%	80%	80%	80%
	AC CURRENT (Typ.)	1.3A/115VAC 0.7A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 30A/230VAC								
	LEAKAGE CURRENT	<2mA / 240VAC								
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.8 ~ 4.46V	5.75 ~ 6.75V	8.63 ~ 10.13V	13.8 ~ 16.2V	15.53 ~ 18.23V	17.25 ~ 20.25V	27.6 ~ 32.4V	31.05 ~ 36.45V	55.2 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover								
FUNCTION	REMOTE CONTROL(OPTION)	CN3:4 ~ 10VDC POWER OFF, <0 ~ 0.8VDC POWER ON								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A								
OTHERS	MTBF	208.8K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	179*97*33mm (L*W*H)								
	PACKING	0.58Kg; 20pcs/12Kg/0.64CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Derating may be needed under low input voltages. Please check the derating curve for more details.									

■ Mechanical Specification

Case No. 920A Unit:mm



Terminal Pin No. Assignment

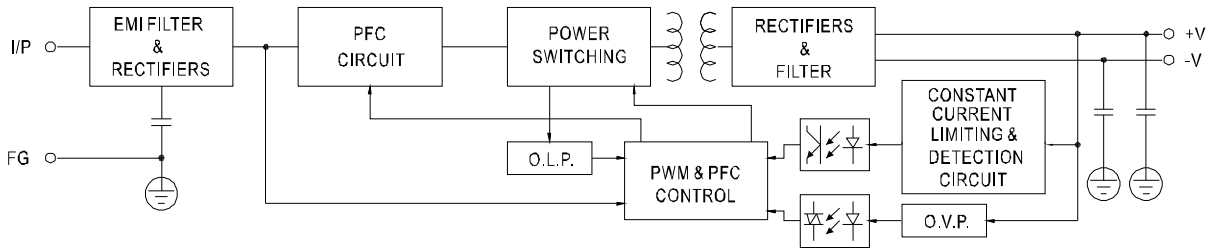
Pin No.	Assignment	Pin No.	Assignment
1	DC OUTPUT +V	4	AC/N
2	DC OUTPUT -V	5	AC/L
3	FG ⏚		

Remote ON/OFF(CN3): Molex 5046-02 or equivalent(optional)

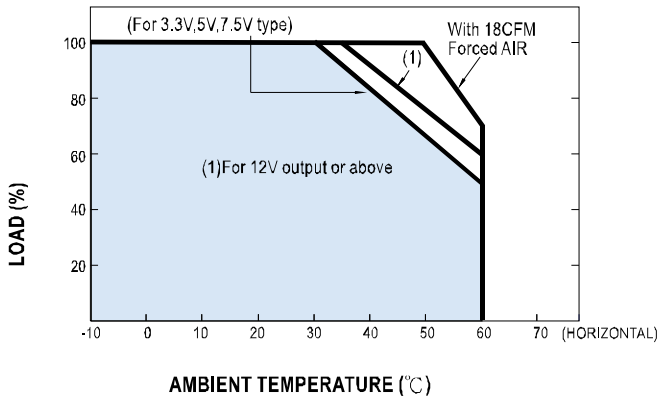
Pin No.	Assignment	Mating Housing	Terminal
1	RC-	Molex 5051 or equivalent	Molex 2759 or equivalent
2	RC+		

■ Block Diagram

PFC fosc : 67KHz
PWM fosc : 134KHz

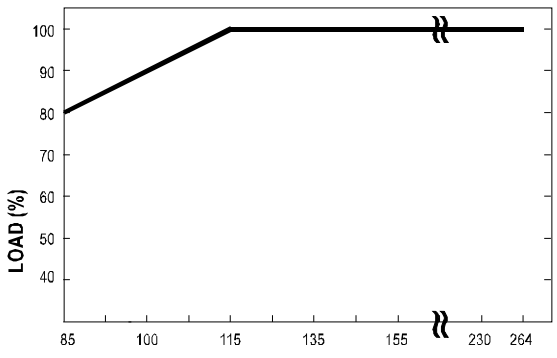


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 100W Single Output with PFC Function SP-100 series

■ Features :

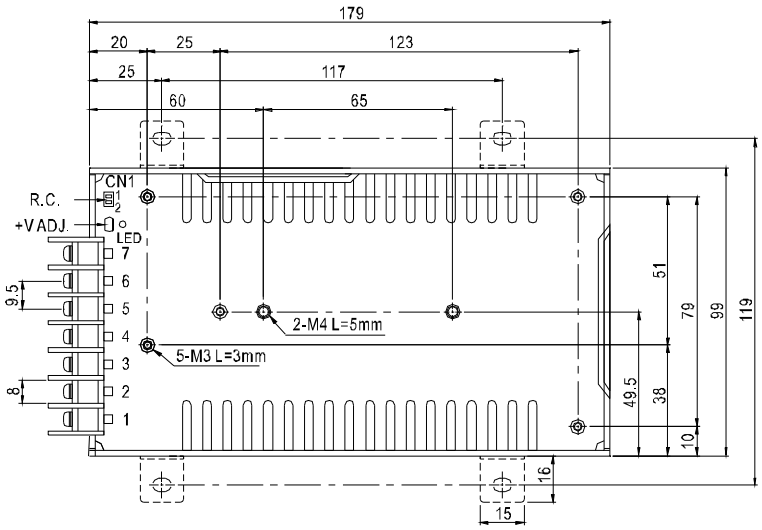
- Universal AC input / full range
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage
- Built-in constant current limiting circuit
- Remote ON-OFF control(Optional)
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at PFC:67KHz PWM:134KHz

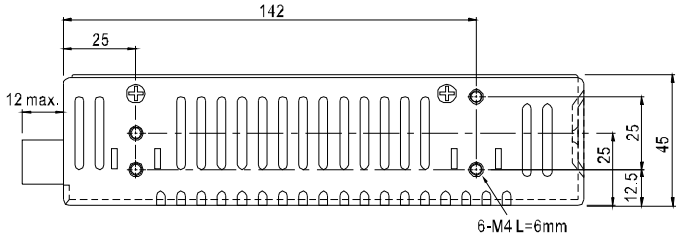
SPECIFICATION

MODEL		SP-100-3.3	SP-100-5	SP-100-7.5	SP-100-12	SP-100-13.5	SP-100-15	SP-100-24	SP-100-27	SP-100-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	20A	20A	13.5A	8.5A	7.5A	6.7A	4.2A	3.8A	2.1A
	CURRENT RANGE	0 ~ 20A	0 ~ 20A	0 ~ 13.5A	0 ~ 8.5A	0 ~ 7.5A	0 ~ 6.7A	0 ~ 4.2A	0 ~ 3.8A	0 ~ 2.1A
	RATED POWER	66W	100W	101.25W	102W	101.25W	100.5W	100.8W	102.6W	100.8W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.9V	14.3 ~ 16.5V	22.8 ~ 26.4V	25.7 ~ 29.7V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	600ms, 30ms at full load								
	HOLD UP TIME (Typ.)	20ms at full load								
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.98/115VAC at full load								
	EFFICIENCY (Typ.)	70%	76%	78%	80%	80%	82%	84%	83%	82%
	AC CURRENT (Typ.)	1.7A/115VAC 0.8A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 30A/230VAC								
	LEAKAGE CURRENT	<2mA / 240VAC								
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.63 ~ 4.46V	5.5 ~ 6.75V	8.25 ~ 10.13V	13.2 ~ 16.2V	14.85 ~ 18.23V	16.5 ~ 20.25V	26.4 ~ 32.4V	29.7 ~ 36.45V	52.8 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover								
FUNCTION	REMOTE CONTROL(OPTION)	CN1:4 ~ 10VDC POWER ON, <0 ~ 0.8VDC POWER OFF								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A								
OTHERS	MTBF	211.3K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	179*99*45mm (L*W*H)								
	PACKING	0.66Kg; 20pcs/14.3Kg/1.17CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 915A Unit:mm





Terminal Pin No. Assignment

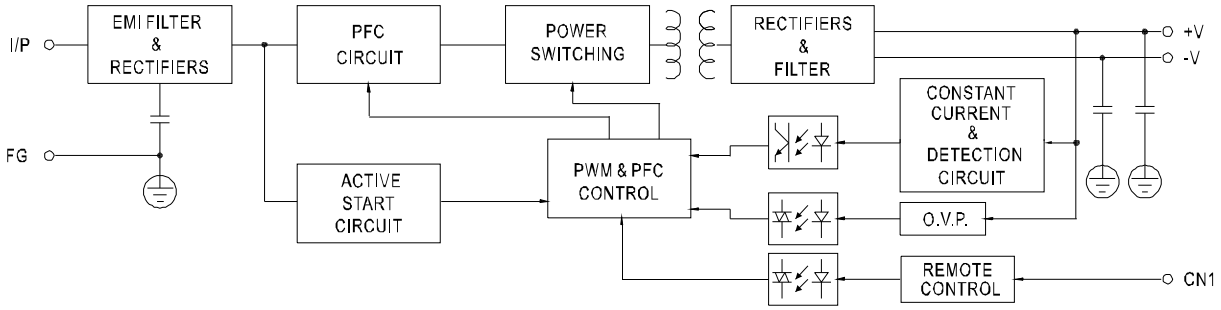
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

Remote ON/OFF(CN1): JST S2B-XH or equivalent(optional)

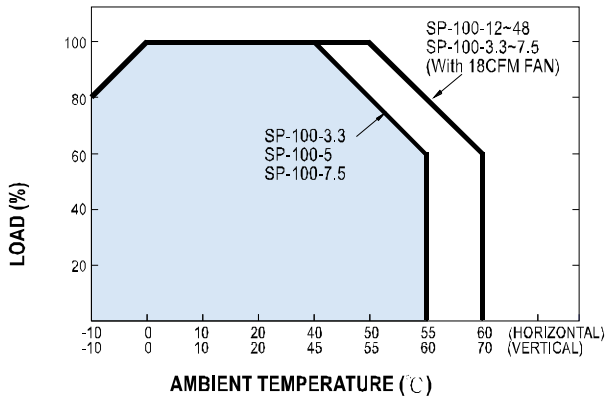
Pin No.	Assignment	Mating Housing	Terminal
1	RC+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	RC-		

■ Block Diagram

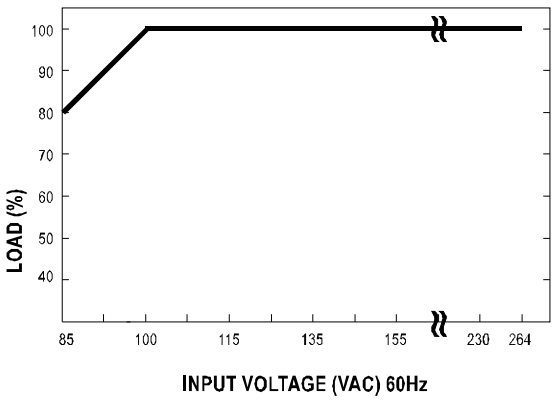
PFC fosc : 67KHz
PWM fosc : 134KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 150W Single Output with PFC Function **SP-150 series**

■ Features :

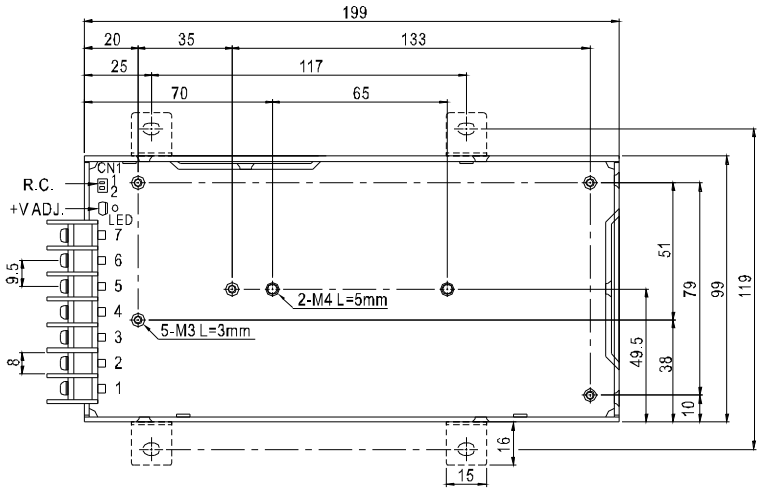
- Universal AC input / Full range
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in constant current limiting circuit
- Remote ON-OFF control(Optional)
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at PFC:67KHz PWM:134KHz

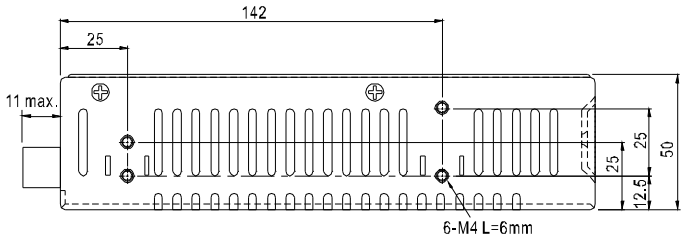
SPECIFICATION

MODEL		SP-150-3.3	SP-150-5	SP-150-7.5	SP-150-12	SP-150-13.5	SP-150-15	SP-150-24	SP-150-27	SP-150-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	30A	30A	20A	12.5A	11.2A	10A	6.3A	5.6A	3.2A
	CURRENT RANGE	0 ~ 30A	0 ~ 30A	0 ~ 20A	0 ~ 12.5A	0 ~ 11.2A	0 ~ 10A	0 ~ 6.3A	0 ~ 5.6A	0 ~ 3.2A
	RATED POWER	99W	150W	150W	150W	151.2W	150W	151.2W	151.2W	153.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.9V	14.3 ~ 16.5V	22.8 ~ 26.4V	25.7 ~ 29.7V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	600ms, 30ms at full load								
	HOLD UP TIME (Typ.)	20ms at full load								
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC 120 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.98/115VAC at full load								
	EFFICIENCY (Typ.)	67%	75%	79%	80%	80%	81%	83%	84%	84%
	AC CURRENT (Typ.)	2.5A/115VAC 1.2A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 40A/230VAC								
	LEAKAGE CURRENT	<2mA / 240VAC								
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.63 ~ 4.46V	5.5 ~ 6.75V	8.25 ~ 10.13V	13.2 ~ 16.2V	14.85 ~ 18.2V	16.5 ~ 20.25V	26.4 ~ 32.4V	29.7 ~ 36.45V	52.8 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER TEMPERATURE	95℃ ±5℃ (TSW1 : detect on heatsink of power transistor)								
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
FUNCTION	REMOTE CONTROL(OPTION)	CN1:4 ~ 10VDC POWER ON, <0 ~ 0.8VDC POWER OFF								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A								
OTHERS	MTBF	191.2K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	199*99*50mm (L*W*H)								
	PACKING	0.76Kg; 20pcs/16.4Kg/1.28CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Derating may be needed under low input voltages. Please check the derating curve for more details.									

■ Mechanical Specification

Case No. 916A Unit:mm





Terminal Pin No. Assignment

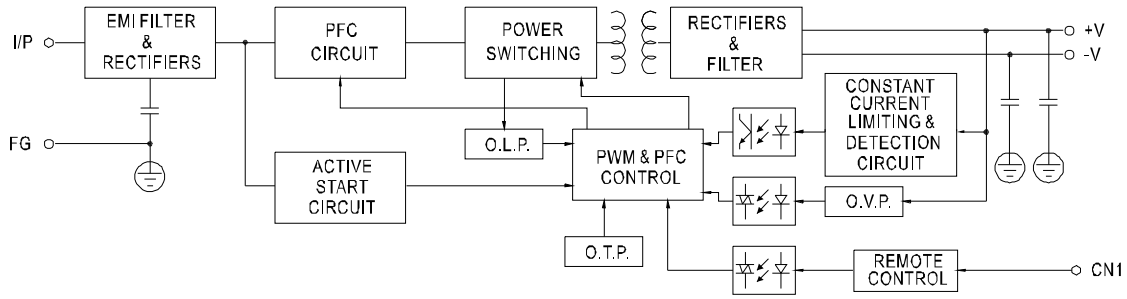
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

Remote ON/OFF(CN1):JST S2B-XH or equivalent(optional)

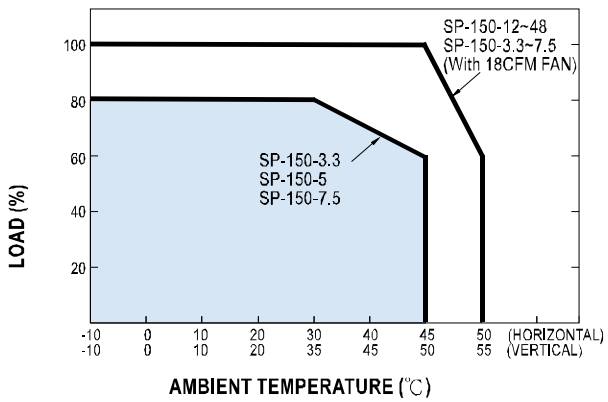
Pin No.	Assignment	Mating Housing	Terminal
1	RC+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	RC-		

■ Block Diagram

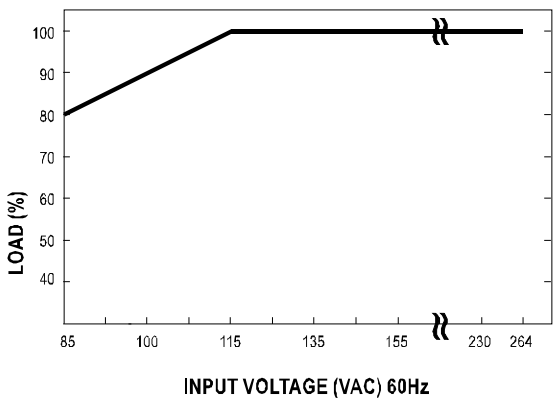
PFC fosc : 67KHz
PWM fosc : 134KHz



■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 200W Single Output with PFC Function **SP-200 series**

■ Features :

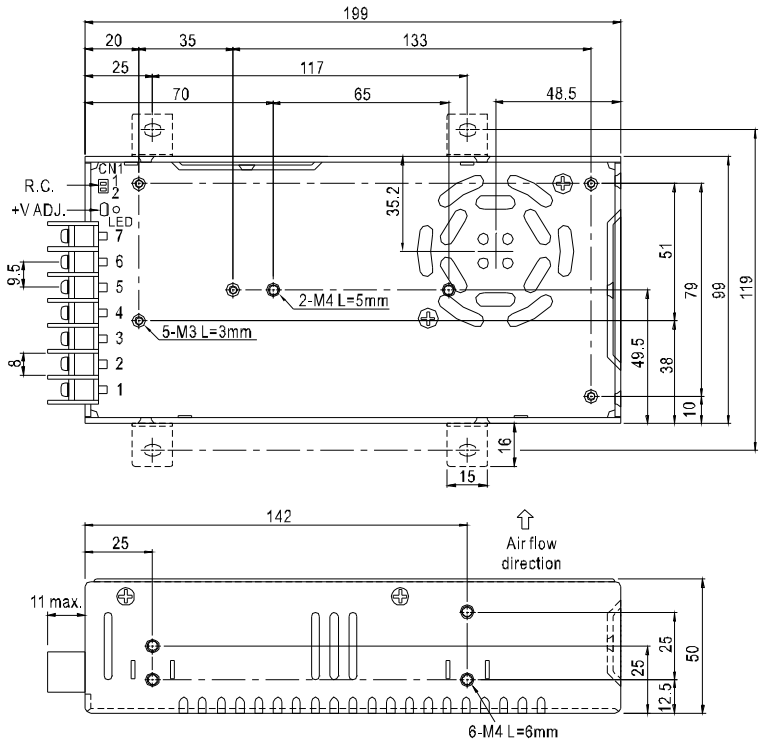
- Universal AC input / full range
- Built-in active PFC function, PF>0.93
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in cooling fan speed control
- Built-in constant current limiting circuit
- Built-in fan speed control
- Remote ON-OFF control(Optional)
- LED indicator for power on
- 100% full load burn-in test
- Fixed switching frequency at PFC:67KHz PWM:134KHz

SPECIFICATION

MODEL		SP-200-3.3	SP-200-5	SP-200-7.5	SP-200-12	SP-200-13.5	SP-200-15	SP-200-24	SP-200-27	SP-200-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	40A	40A	26.7A	16.7A	14.9A	13.4A	8.4A	7.5A	4.2A
	CURRENT RANGE	0 ~ 40A	0 ~ 40A	0 ~ 26.7A	0 ~ 16.7A	0 ~ 14.9A	0 ~ 13.4A	0 ~ 8.4A	0 ~ 7.5A	0 ~ 4.2A
	RATED POWER	132W	200W	200.25W	200.4W	201.15W	201W	201.6W	202.5W	201.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.9V	14.3 ~ 16.5V	22.8 ~ 26.4V	25.7 ~ 29.7V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	600ms, 30ms at full load								
	HOLD UP TIME (Typ.)	20ms at full load								
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.98/115VAC at full load								
	EFFICIENCY (Typ.)	65%	71%	76%	79%	80%	81%	83%	83%	84%
	AC CURRENT (Typ.)	3.5A/115VAC 1.7A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 40A/230VAC								
	LEAKAGE CURRENT	<2mA / 240VAC								
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	3.63 ~ 4.46V	5.5 ~ 6.75V	8.25 ~ 10.13V	13.2 ~ 16.2V	14.85 ~ 18.2V	16.5 ~ 20.25V	26.4 ~ 32.4V	29.7 ~ 36.45V	52.8 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER TEMPERATURE	95℃±5℃ (TSW1 : detect on heatsink of power transistor)								
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down								
FUNCTION	REMOTE CONTROL(OPTION)	CN1:4 ~ 10VDC POWER ON, <0 ~ 0.8VDC POWER OFF								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, CCC GB4943 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH								
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A								
OTHERS	MTBF	183.8K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	199*99*50mm (L*W*H)								
	PACKING	0.85Kg; 20pcs/17.9Kg/1.28CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

Case No. 916B Unit:mm



Terminal Pin No. Assignment

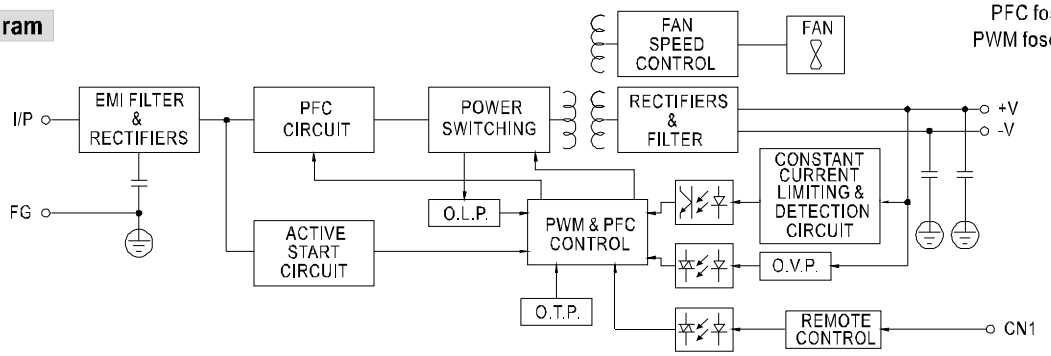
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

Remote ON/OFF(CN1):JST S2B-XH or equivalent(optional)

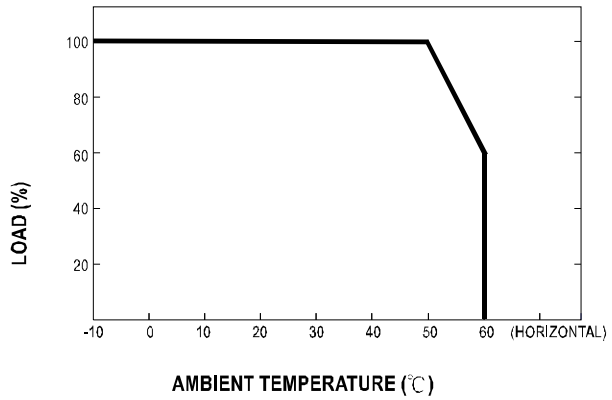
Pin No.	Assignment	Mating Housing	Terminal
1	RC+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2	RC-		

■ Block Diagram

PFC fosc : 67KHz
PWM fosc : 134KHz

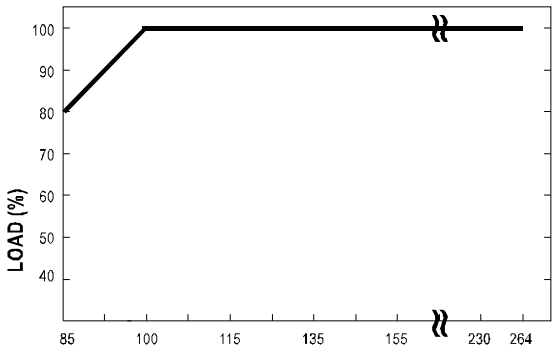


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Output Derating VS Input Voltage



INPUT VOLTAGE (VAC) 60Hz

NIETZ 240W Single Output with PFC Function **SP-240 series**

■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC Fan
- Built-in fan ON / OFF control
- LED indicator for power on
- Fixed switching frequency at 90KHz

SPECIFICATION

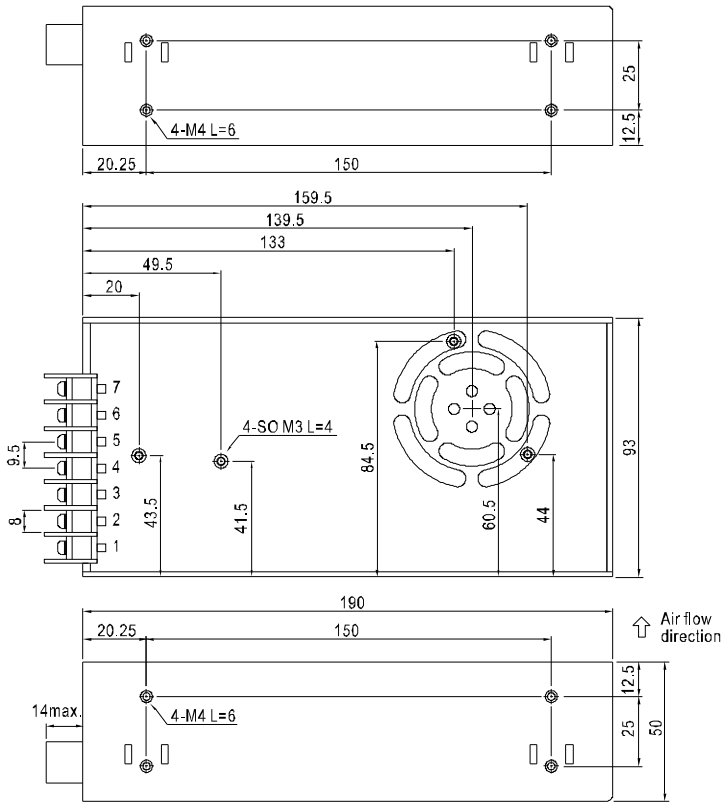
MODEL		SP-240-5	SP-240-7.5	SP-240-12	SP-240-15	SP-240-24	SP-240-30	SP-240-48
OUTPUT	DC VOLTAGE	5V	7.5V	12V	15V	24V	30V	48V
	RATED CURRENT	45A	32A	20A	16A	10A	8A	5A
	CURRENT RANGE	0 ~ 45A	0 ~ 32A	0 ~ 20A	0 ~ 16A	0 ~ 10A	0 ~ 8A	0 ~ 5A
	RATED POWER	225W	240W	240W	240W	240W	240W	240W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4 ~ 6V	6 ~ 9V	10 ~ 14V	12 ~ 18V	20 ~ 28V	27 ~ 33V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	800ms, 50ms/230VAC 1500ms, 50ms/115VAC at full load						
	HOLD UP TIME (Typ.)	20ms/230VAC 20ms/115VAC at full load						
INPUT	VOLTAGE RANGE Note.5	88 ~ 264VAC 124 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.98/115VAC at full load						
	EFFICIENCY (Typ.)	79%	83%	86%	86%	87%	88%	89%
	AC CURRENT (Typ.)	3.6A/115VAC 1.8A/230VAC						
	INRUSH CURRENT (Typ.)	25A/115VAC 40A/230VAC						
	LEAKAGE CURRENT	<2mA / 240VAC						
PROTECTION	OVERLOAD	105 ~ 135% rated output power						
		Protection type : Hiccup mode, recovers automatically after fault condition is removed						
	OVER VOLTAGE	6.3 ~ 7.5V	9.4 ~ 10.9V	14.7 ~ 17.5V	19 ~ 22.5V	29.5 ~ 35V	34.7 ~ 41V	57.6 ~ 67.2V
		Protection type : Shut down o/p voltage, re-power on to recover						
	OVER TEMPERATURE	90℃ ±5℃ (5V,7.5V), 85℃ ±5℃ (12V,15V,24V,30V,48V) (TSW1 : detect on heatsink of power transistor)						
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down						
FUNCTION	FAN CONTROL	RTH2＞40℃ FAN ON, ＜35℃ FAN OFF(Typ.)						
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 90% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes						
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A						
OTHERS	MTBF	284K hrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	190*93*50mm (L*W*H)						
	PACKING	0.8Kg; 18pcs/15.4Kg/1.04CUFT						

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment
5. Derating may be needed under low input voltages. Please check the derating curve for more details.

■ Mechanical Specification

Case No.987A Unit:mm

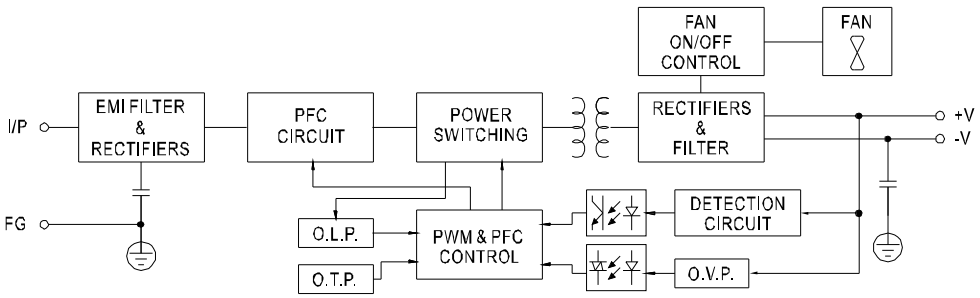


Terminal Pin No. Assignment

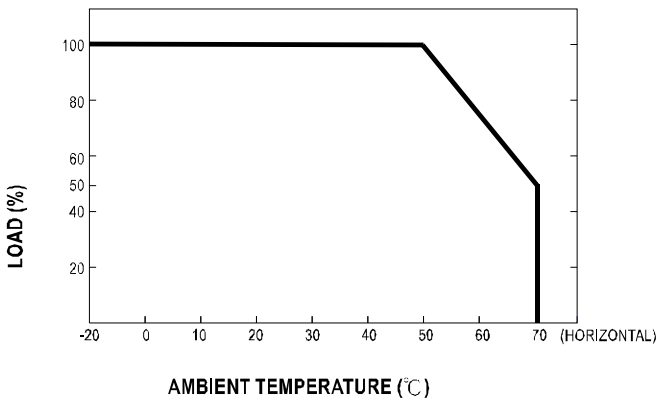
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

fosc : 90KHz

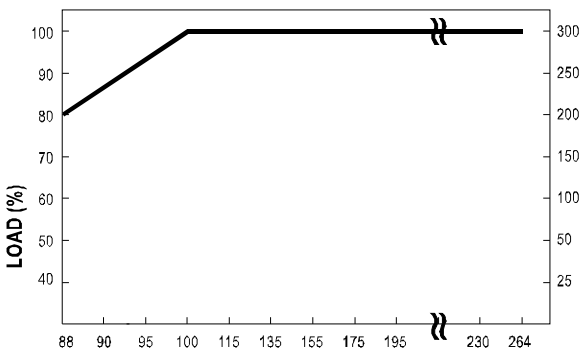


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics



INPUT VOLTAGE (VAC) 60Hz

NIETZ 320W Single Output with PFC Function **SP-320 series**

■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC Fan
- Built-in fan speed control
- Fixed switching frequency at 100KHz

SPECIFICATION

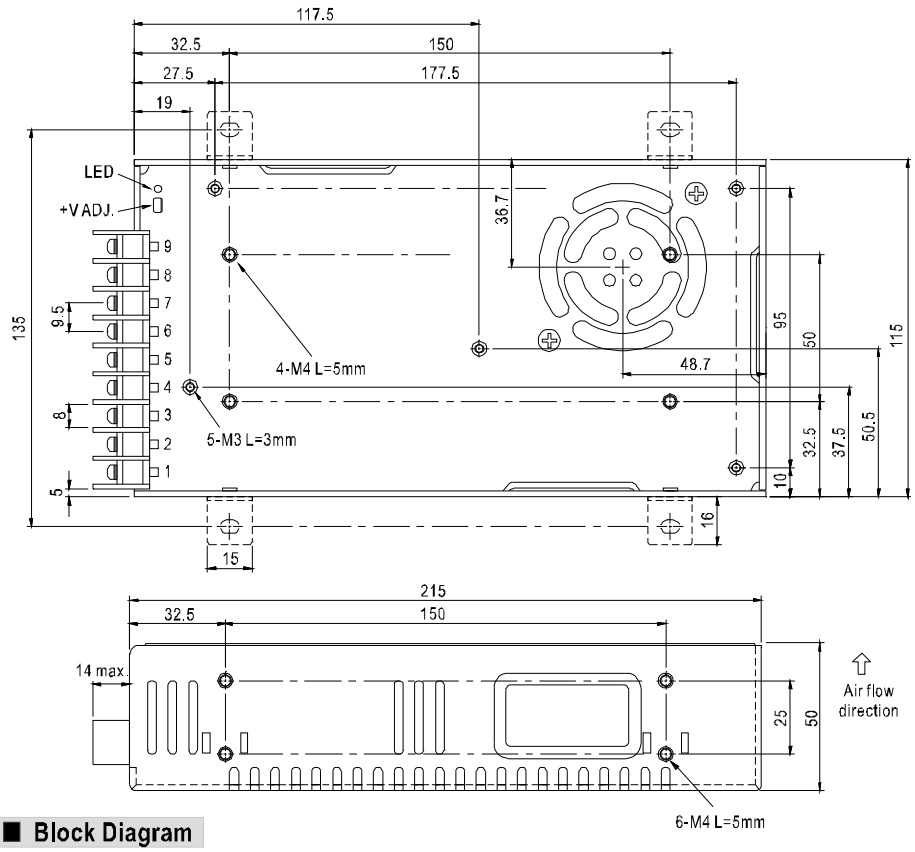
MODEL			SP-320-3.3	SP-320-5	SP-320-7.5	SP-320-12	SP-320-13.5	SP-320-15	SP-320-24	SP-320-27	SP-320-36	SP-320-48
OUTPUT	DC VOLTAGE		3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	36V	48V
	RATED CURRENT		55A	55A	40A	25A	22A	20A	13A	11.7A	8.8A	6.7A
	CURRENT RANGE		0 ~ 60A	0 ~ 55A	0 ~ 40A	0 ~ 25A	0 ~ 22A	0 ~ 20A	0 ~ 13A	0 ~ 11.7A	0 ~ 8.8A	0 ~ 6.7A
	RATED POWER		181.5W	275W	300W	300W	297W	300W	312W	315.9W	316.8W	321.6W
	RIPPLE & NOISE (max.) Note.2		150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	220mVp-p	240mVp-p
	VOLTAGE ADJ. RANGE		3.14 ~ 3.63V	4.5 ~ 5.5V	6 ~ 9V	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	26 ~ 31.5V	32.4 ~ 39.6V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3		±1.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION		±0.5%	±0.5%	±0.5%	±0.3%	±0.3%	±0.3%	±0.2%	±0.2%	±0.2%	±0.2%
	LOAD REGULATION		±1.5%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME		800ms, 50ms/230VAC 2500ms, 50ms/115VAC at full load									
	HOLD UP TIME (Typ.)		16ms/230VAC 16ms/115VAC at full load									
INPUT	VOLTAGE RANGE Note.5		88 ~ 264VAC 124 ~ 370VDC									
	FREQUENCY RANGE		47 ~ 63Hz									
	POWER FACTOR (Typ.)		PF>0.95/230VAC PF>0.98/115VAC at full load									
	EFFICIENCY (Typ.)		74%	79%	83%	86%	86%	86%	87%	88%	87%	89%
	AC CURRENT (Typ.)	115VAC	2.5A	5A								
		230VAC	1.5A	2.5A								
	INRUSH CURRENT (Typ.)		20A/115VAC 40A/230VAC									
	LEAKAGE CURRENT		<1mA / 240VAC									
PROTECTION	OVERLOAD		105 ~ 135% rated output power									
			Protection type : Hiccup mode, recovers automatically after fault condition is removed									
	OVER VOLTAGE		3.8 ~ 4.5V	5.75 ~ 6.75V	9.4 ~ 10.9V	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	33.7 ~ 39.2V	45 ~ 52.5V	57.6 ~ 67.2V
			Protection type : Shut down o/p voltage, re-power on to recover									
	OVER TEMPERATURE		80℃ ±5℃ (70℃ ±5℃ 3.3V,5V only) (TSW1 : detect on heatsink of power transistor)									
			Protection type : Shut down o/p voltage, recovers automatically after temperature goes down									
ENVIRONMENT	WORKING TEMP.		-20 ~ +65℃ (Refer to "Derating Curve")									
	WORKING HUMIDITY		20 ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY		-40 ~ +85℃, 10 ~ 95% RH									
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 50℃)									
	VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes									
SAFETY & EMC (Note 4)	SAFETY STANDARDS		UL60950-1, TUV EN60950-1, CCC GB4943(except for 3.3V, 36V) approved									
	WITHSTAND VOLTAGE		I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC									
	ISOLATION RESISTANCE		I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH									
	EMC EMISSION		Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3									
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A									
OTHERS	MTBF		207K hrs min. MIL-HDBK-217F (25℃)									
	DIMENSION		215*115*50mm (L*W*H)									
	PACKING		1.1Kg; 12pcs/14Kg/0.92CUFT									

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment.
5. Derating may be needed under low input voltages. Please check the derating curve for more details.

■ Mechanical Specification

Case No. 912G Unit:mm

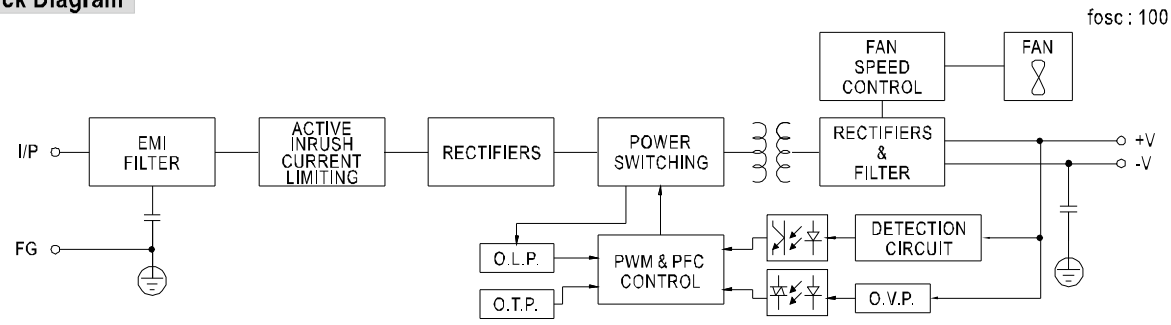


Terminal Pin No. Assignment :

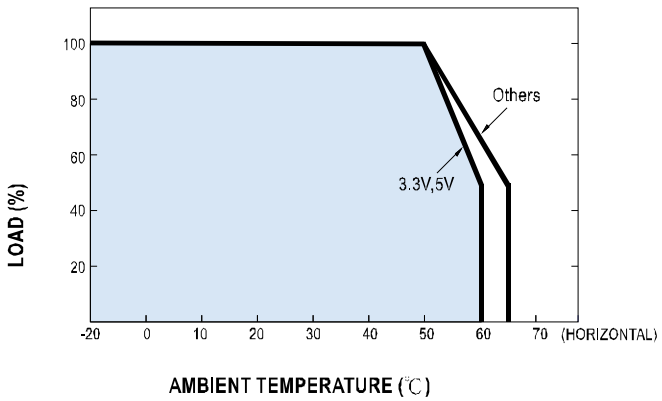
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Block Diagram

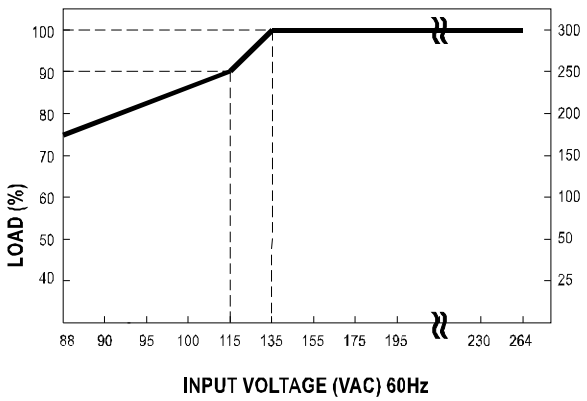
fosc : 100KHz



■ Derating Curve



■ Static Characteristics



NIETZ 500W Single Output with PFC Function **SP-500 series**

■ Features :

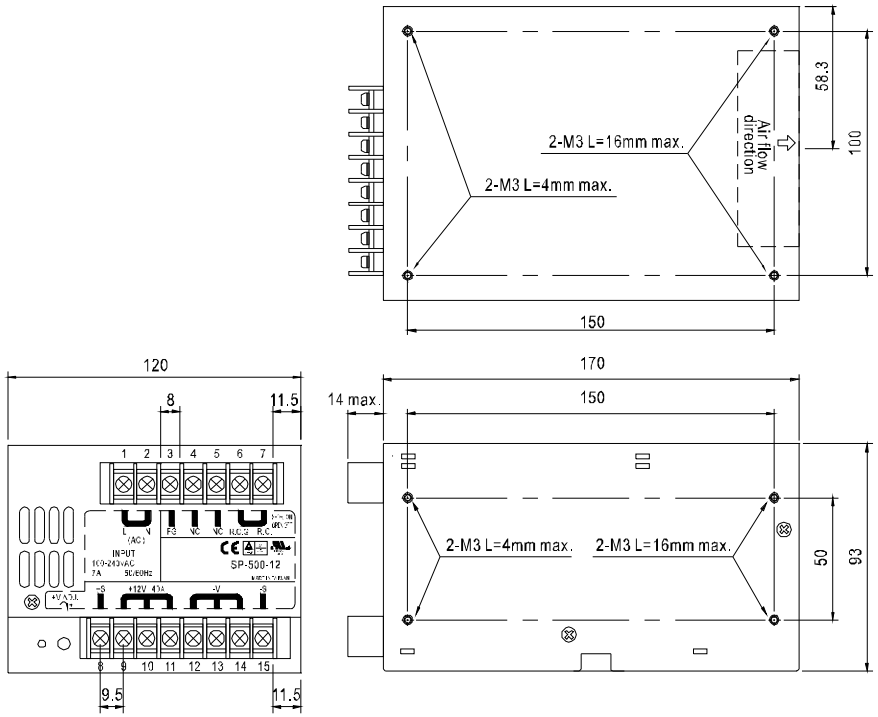
- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload/ Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- Built-in cooling Fan ON-OFF control
- Built-in remote ON-OFF control
- Built-in remote sense function
- Fixed switching frequency at 110KHz

SPECIFICATION

MODEL		SP-500-12	SP-500-13.5	SP-500-15	SP-500-24	SP-500-27	SP-500-48
OUTPUT	DC VOLTAGE	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	40A	36A	32A	20A	18A	10A
	CURRENT RANGE	0 ~ 40A	0 ~ 36A	0 ~ 32A	0 ~ 20A	0 ~ 18A	0 ~ 10A
	RATED POWER	480W	486W	480W	480W	486W	480W
	RIPPLE & NOISE (max.) Note.2	240mVp-p	240mVp-p	240mVp-p	240mVp-p	200mVp-p	300mVp-p
	VOLTAGE ADJ. RANGE	10 ~ 13.2V	12 ~ 15V	13.5 ~ 18V	20 ~ 26.4V	24 ~ 30V	41 ~ 56V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1500ms, 50ms at full load					
	HOLD UP TIME (Typ.)	24ms at full load					
INPUT	VOLTAGE RANGE Note.5	88 ~ 264VAC 124 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.95/230VAC PF>0.95/115VAC at full load					
	EFFICIENCY(Typ.)	84%	84%	83%	85.5%	86.5%	87%
	AC CURRENT (Typ.)	7A/115VAC 3.5A/230VAC					
	INRUSH CURRENT (Typ.)	18A/115VAC 36A/230VAC					
	LEAKAGE CURRENT	<3.5mA/240VAC					
PROTECTION	OVERLOAD	105 ~ 135% rated output power					
		Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	13.8 ~ 16.2V	15.5 ~ 18.2V	18 ~ 21V	27.6 ~ 32.4V	31 ~ 36.5V	57.6 ~ 67.2V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	FAN CONTROL, O.T.P.	RTH1 or RTH2 ≧50℃ FAN ON, ≦45℃ FAN OFF, ≧70℃ output shutdown					
FUNCTION	REMOTE CONTROL	RC+/RC-: Short = power on ; Open = power off					
ENVIRONMENT	WORKING TEMP.	-10 ~ +50℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1, CCC GB4943(for 24V only) approved					
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, light industry level, criteria A					
OTHERS	MTBF	133.4K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	170*120*93mm (L*W*H)					
	PACKING	1.9Kg; 8pcs/15.5Kg/1.06CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Derating may be needed under low input voltages. Please check the derating curve for more details.						

■ Mechanical Specification

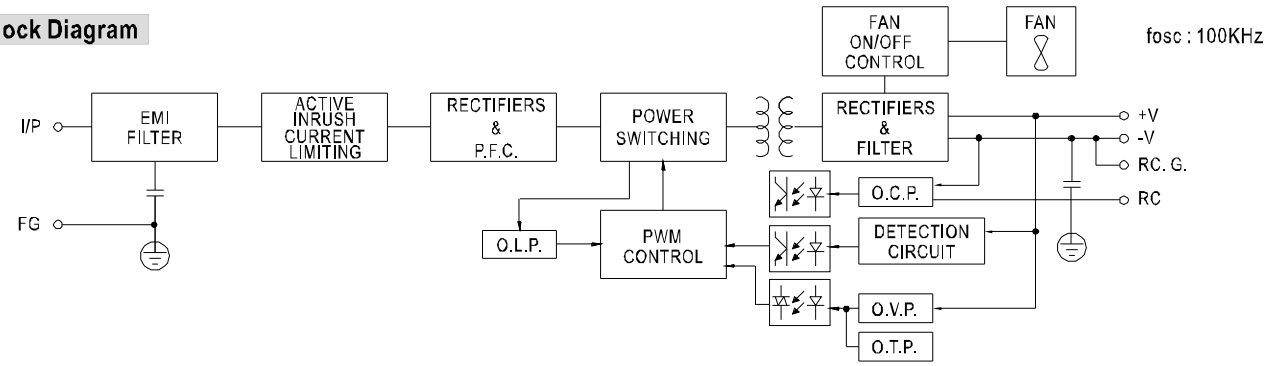
Case No. 910 Unit:mm



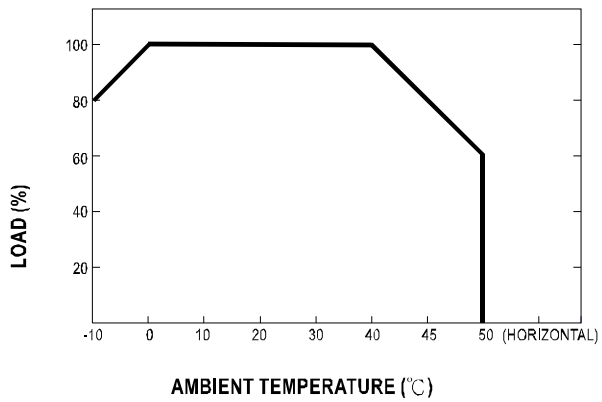
Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	7	R.C.
2	AC/N	8	+S
3	FG ⏚	9~11	DC OUTPUT +V
4,5	NC	12~14	DC OUTPUT -V
6	R.C.G	15	-S

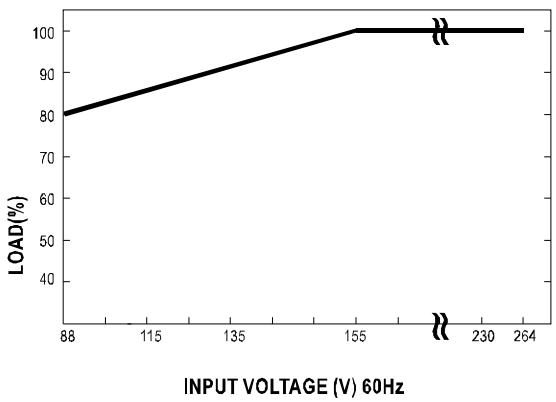
■ Block Diagram



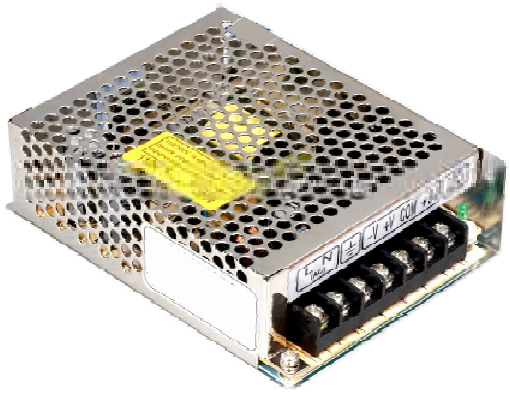
■ Derating Curve



■ Output Derating VS Input Voltage



NIETZ 30W Triple Output Switching Power Supply **T-30 series**



■ Features :

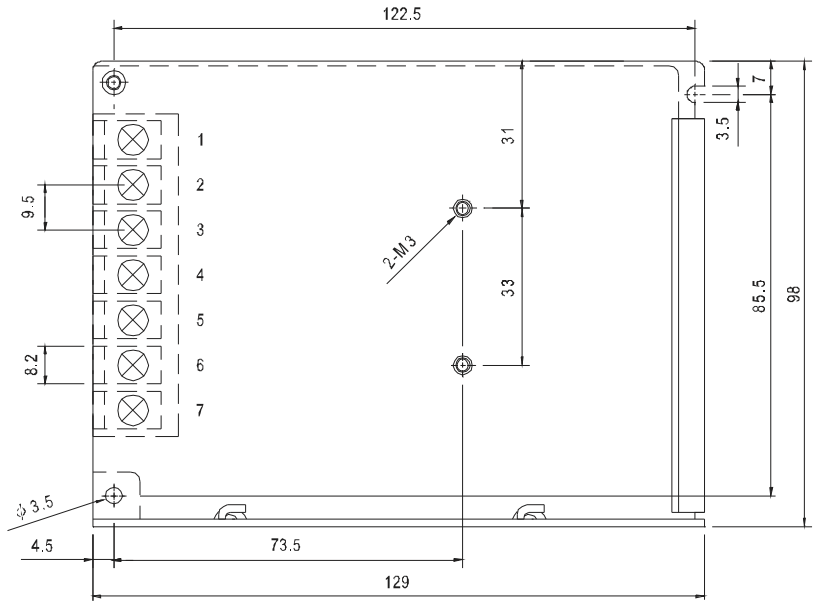
- AC input range selected by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 23KHz
- 1 year warranty

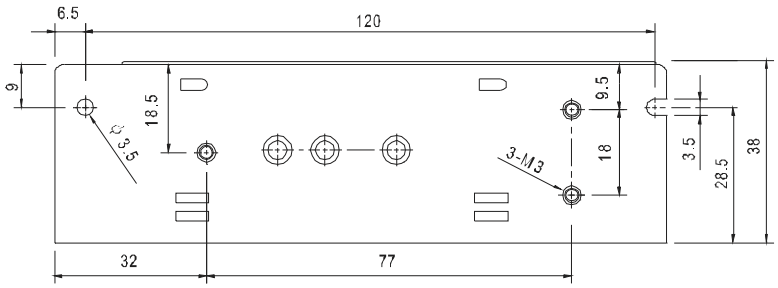
SPECIFICATION

MODEL		T-30A			T-30B		
OUTPUT	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V
	RATED CURRENT	3A	1A	0.5A	3A	1A	0.5A
	CURRENT RANGE	0.5 ~ 3A	0.1 ~ 1A	0.1 ~ 0.5A	0.5 ~ 3A	0.1 ~ 1A	0.1 ~ 0.5A
	RATED POWER	30W			33W		
	RIPPLE & NOISE (max.) Note.2	50mVp-p	100mVp-p	50mVp-p	50mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	CH1 : 4.75 ~ 5.5V			CH1 : 4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	+ 2,-6%	+2,-10%	±2.0%	+ 2,-6%	±6.0%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±0.5%	±5.0%	±5.0%	±0.5%	±5.0%	±5.0%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 30ms at full load					
INPUT	VOLTAGE RANGE	85 ~ 132VAC / 170 ~ 264VAC selected by switch 240 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY(Typ.)	70%			72%		
	AC CURRENT	0.8A/115VAC 0.45A/230VAC					
	INRUSH CURRENT(max.)	COLD START 18A/115VAC 36A/230VAC					
	LEAKAGE CURRENT	<0.75mA / 240VAC					
PROTECTION	OVER LOAD	105 ~ 150% rated output power					
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed.					
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)on +5V output					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012					
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC					
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC					
	EMI CONDUCTION & RADIATION	Design refer to FCC Part15 J Conduction Class A					
OTHERS	MTBF	463.1K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	129*98*38mm (L*W*H)					
	PACKING	0.42Kg; 30pcs/13.6Kg/0.86CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.						

■ Mechanical Specification

Case No. 903 Unit:mm

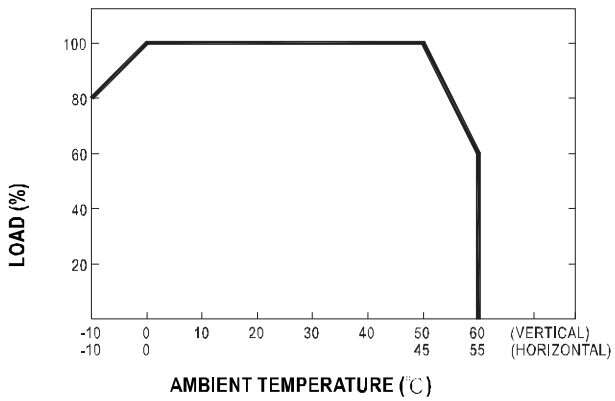




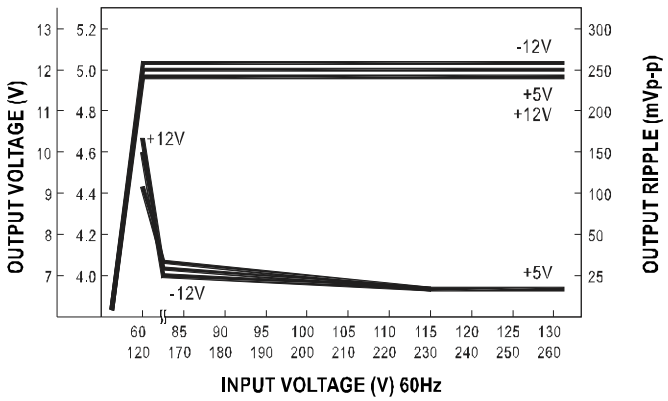
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT -V	7	DC OUTPUT +V1
2	AC/N	5	DC OUTPUT +V2		
3	FG ⏚	6	DC OUTPUT COM		

■ Output Derating



■ Static Characteristics (B)



NIETZ 50W Triple Output Switching Power Supply T-50 series

■ Features :

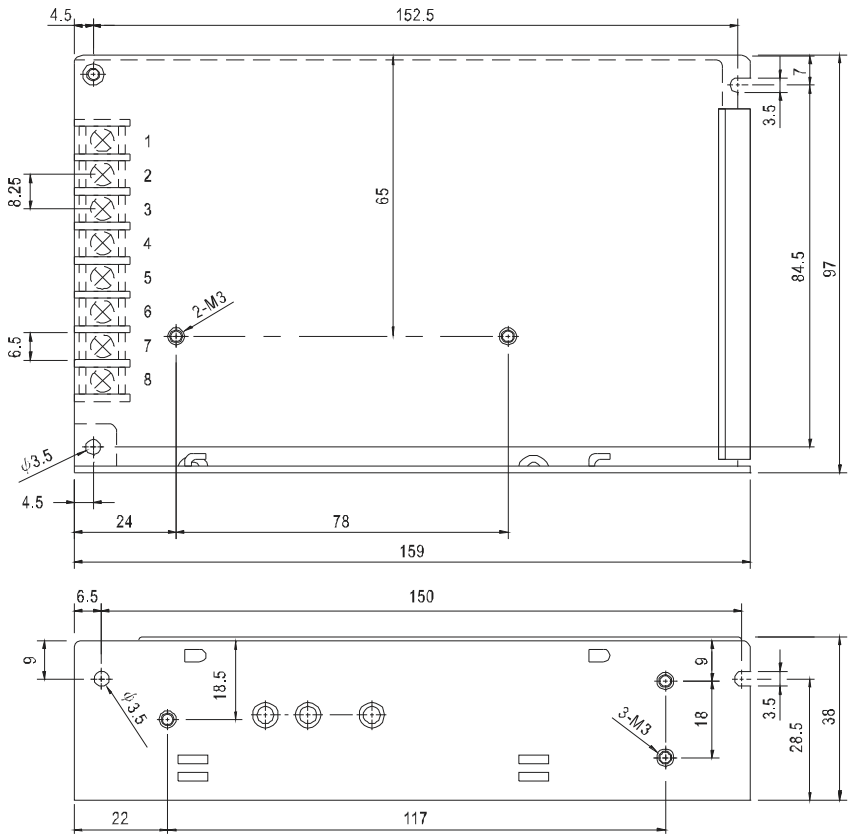
- AC input range selectable by switch
- Protections:Short circuit/Over load
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 24KHz I/P-O/P:Rated
- Low cost
- High reliability
- 1 year warranty

SPECIFICATION

MODEL		T-50A			T-50B			T-50C			T-50D		
OUTPUT	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V
	RATED CURRENT	7A	1A	1A	5A	1A	1A	4A	1A	1A	3A	1A	1A
	CURRENT RANGE	0.6 ~ 7A	0.2 ~ 1A	0.2 ~ 1A	0.6 ~ 5A	0.2 ~ 1A	0.2 ~ 1A	0.6 ~ 4A	0.2 ~ 1A	0.2 ~ 1A	0.6 ~ 4A	0.2 ~ 1.2A	0.2 ~ 1.2A
	RATED POWER	52W			49W			50W			51W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	50mVp-p	120mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			CH1:4.75 ~ 5.5V			CH1:4.75 ~ 5.5V			CH1:4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	±5.0%	±5.0%	±2.0%	±5.0%	±5.0%	±2.0%	±5.0%	±5.0%	±2.0%	±6.0%	±6.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±4.0%	±4.0%	±1.0%	±4.0%	±4.0%	±1.0%	±4.0%	±4.0%	±1.0%	±5.0%	±5.0%
	SETUP, RISE, HOLD TIME	200ms, 100ms, 16ms at full load									200ms, 80ms, 16ms at full load		
INPUT	VOLTAGE RANGE	85 ~ 132VAC/170 ~ 264VAC selected by switch 240 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY(Typ.)	66%			69%			71%			72%		
	AC CURRENT	1.6A/115VAC 0.8A/230VAC											
	INRUSH CURRENT(max.)	COLD START 20A/115VAC 40A/230VAC											
	LEAKAGE CURRENT	<0.5mA / 240VAC											
PROTECTION	OVER LOAD	105 ~ 150% rated output power											
		Protection type : Fold back current limiting, recovers automatically after fault condition is removed											
ENVIRONMENT	WORKING TEMP.	20 ~ 90% RH non-condensing											
	WORKING HUMIDITY	-10 ~ +60℃ (Refer to output load derating curve), 20 ~ 90% RH											
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)on +5V output											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes											
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL1012											
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC											
OTHERS	MTBF	470.2K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	159*97*38mm (L*W*H)											
	PACKING	0.54Kg; 24pcs/14Kg/0.75CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation.												

■ Mechanical Specification

Case No. 901 Unit:mm

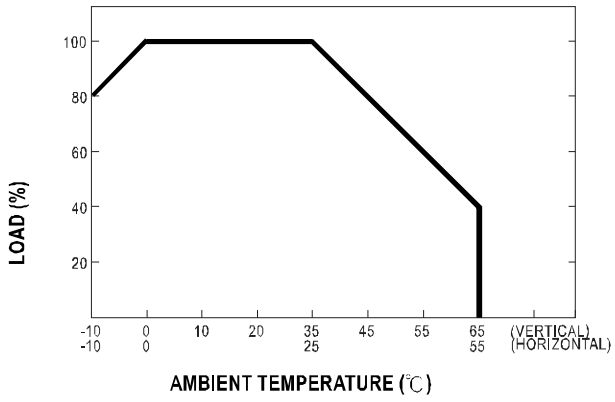


Terminal Pin. No Assignment

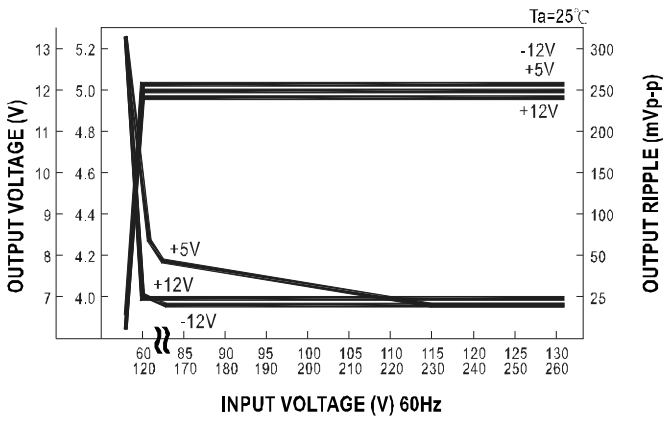
Pin No.	Assignment	Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DC OUTPUT	8	DC OUTPUT +V1
2	AC/N	5,7	DC OUTPUT COM		
3	FG ⏚	6	DC OUTPUT +V2		

MODEL / Pin No.	T-50A	T-50B	T-50C	T-50D
4	-5V	-12V	-15V	+24V

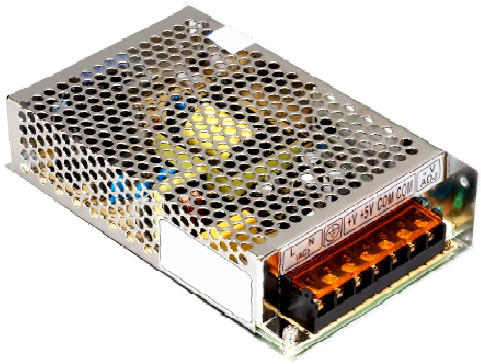
■ Output Derating



■ Static Characteristics (B)



NIETZ 60W Triple Output Switching Power Supply T-60 series



■ Features :

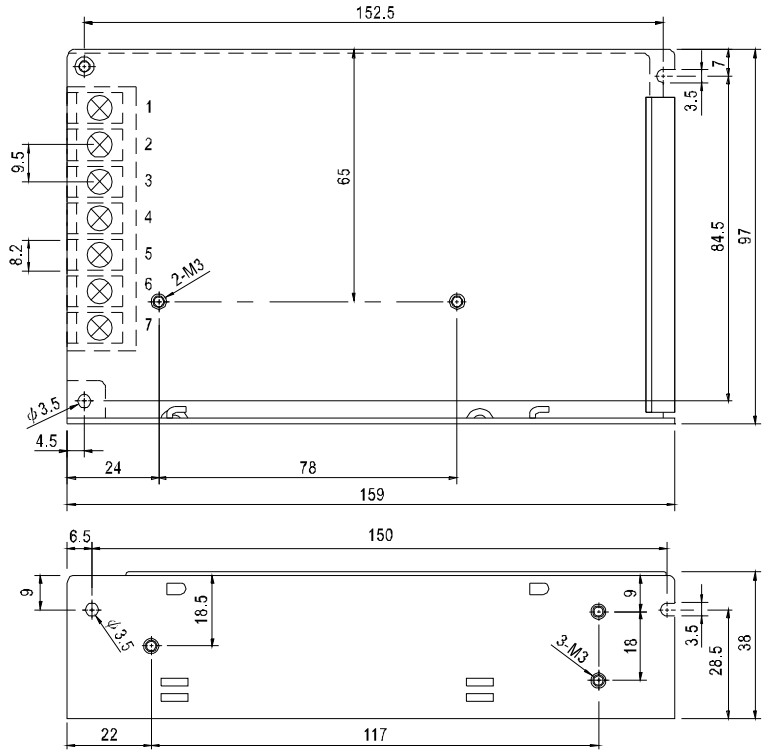
- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- LED indicator for power on
- Fixed switching frequency at 50KHz

SPECIFICATION

MODEL		T-60A			T-60B			T-60C		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V
	RATED CURRENT	5A	2.5A	0.5A	5A	2.5A	0.5A	5A	2A	0.5A
	CURRENT RANGE	0.5 ~ 7A	0.2 ~ 3.5A	0 ~ 1A	0.5 ~ 7A	0.2 ~ 3.5A	0 ~ 1A	0.5 ~ 7A	0.2 ~ 3A	0 ~ 1A
	RATED POWER	57.5W			61W			62.5W		
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	CH1 : 4.75 ~ 5.5V			CH1 : 4.75 ~ 5.5V			CH1 : 4.75 ~ 5.5V		
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±6.0%	±2.0%	±6.0%	±6.0%	±2.0%	±6.0%	±6.0%
	LINE REGULATION	±0.5%	±1.0%	±0.5%	±0.5%	±1.0%	±0.5%	±0.5%	±1.0%	±0.5%
	LOAD REGULATION	±1.0%	±4.0%	±1.0%	±1.0%	±4.0%	±1.0%	±1.0%	±4.0%	±1.0%
	SETUP, RISE TIME	300ms, 50ms/230VAC 800ms, 50ms/115VAC at full load								
	HOLD UP TIME (Typ.)	80ms/230VAC 10ms/115VAC at full load								
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY(Typ.)	72%			72%			72%		
	AC CURRENT (Typ.)	2A/115VAC 1A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC								
	LEAKAGE CURRENT	<3.5mA / 240VAC								
PROTECTION	OVERLOAD	105 ~ 150% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	5V: 5.75 ~ 6.75V								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)on +5V output								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL1012, UL60950-1, TUV EN60950-1 approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH								
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B								
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3								
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A								
OTHERS	MTBF	281.1K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	159*97*38mm (L*W*H)								
	PACKING	0.55Kg; 24pcs/14.1Kg/0.75CUFT								
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.									

■ Mechanical Specification

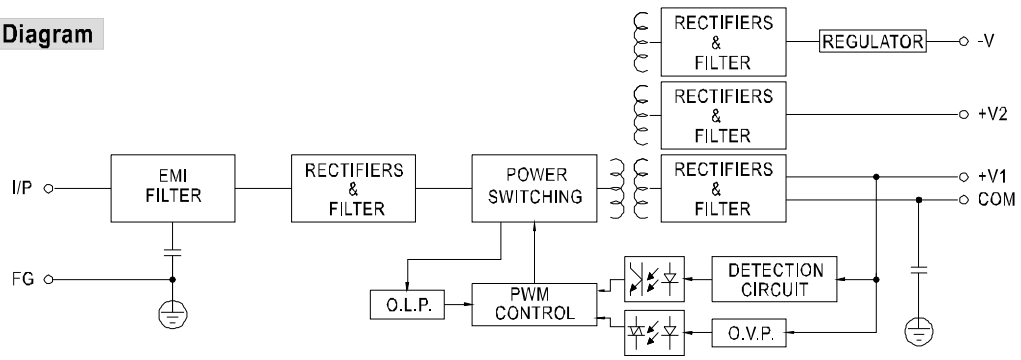
Case No. 901 Unit:mm



Terminal Pin No. Assignment

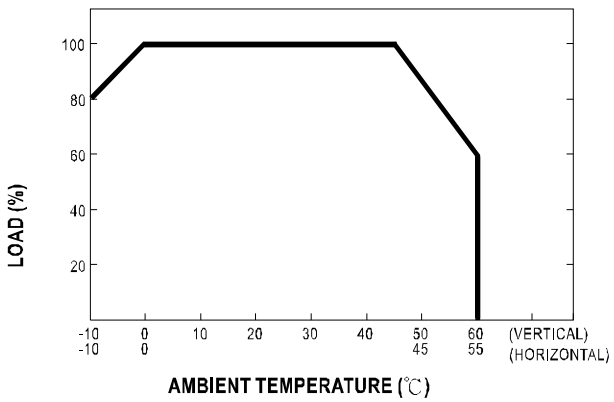
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG ⏚	7	DC OUTPUT +V1
4	DC OUTPUT -V		

■ Block Diagram

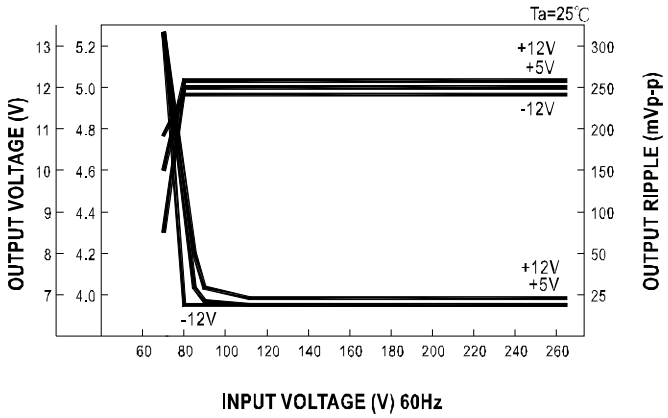


fosc : 50KHz

■ Derating Curve



■ Static Characteristics (B)



NIETZ 120W Triple Output Switching Power Supply T-120 series

■ Features :

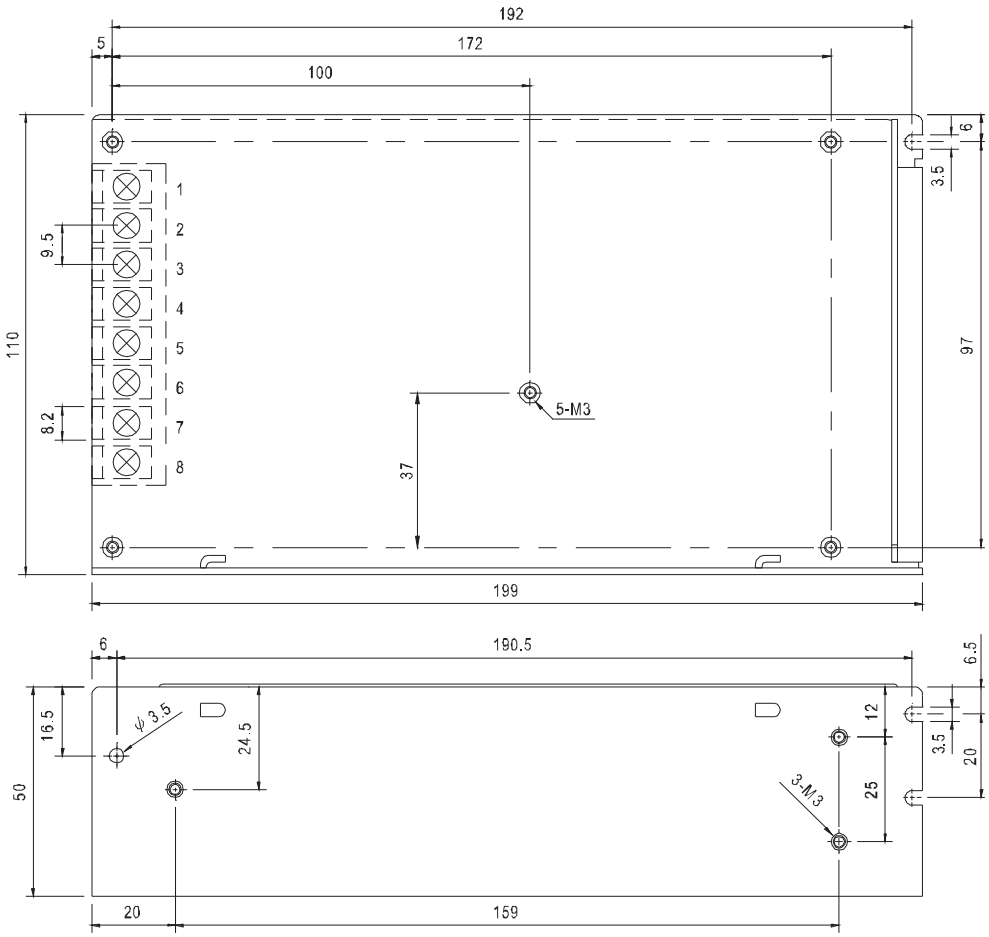
- AC input range selected by switch
- Protections:Short circuit/Over load/Over voltage
- 100% full load burn-in test
- Fixed switching frequency at 25KHz

SPECIFICATION

MODEL		T-120A			T-120B			T-120C			T-120D		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V
	RATED CURRENT	11A	5A	1A	11A	4.5A	1A	10A	3.5A	1A	8A	2.5A	2A
	CURRENT RANGE	2 ~ 12A	0.5 ~ 5A	0.2 ~ 1A	2 ~ 12A	0.5 ~ 5A	0.2 ~ 1A	2 ~ 12A	0.5 ~ 5A	0.2 ~ 1A	2 ~ 12A	0.2 ~ 5A	0.2 ~ 2A
	RATED POWER	120W			121W			117.5W			118W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	80mVp-p	120mVp-p	120mVp-p	80mVp-p	150mVp-p	150mVp-p	80mVp-p	120mVp-p	180mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V											
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±6.0%	±2.0%	±6.0%	±6.0%	±2.0%	+10,-5%	+10,-5%	±2.0%	±6.0%	±6.0%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±0.5%	±5.0%	±5.0%	±0.5%	±5.0%	±5.0%	±0.5%	±6.0%	±6.0%	±0.5%	±5.0%	±5.0%
	SETUP, RISE, HOLD TIME	800ms, 20ms, 20ms/230VAC 1600ms, 20ms, 12ms/115VAC at full load											
INPUT	VOLTAGE RANGE	88 ~ 132VAC/176 ~ 264VAC selected by switch 240 ~ 370VDC											
	FREQUENCY RANGE	47 ~ 63Hz											
	EFFICIENCY (Typ.)	77%			77%			76%			80%		
	AC CURRENT	2.8A/115VAC 1.6A/230VAC											
	INRUSH CURRENT (max.)	COLD START 35A											
	LEAKAGE CURRENT	<3.5mA / 240VAC											
PROTECTION	OVER LOAD	105 ~ 135% rated output power											
		Protection type : Shut down o/p voltage, re-power on to recover											
	OVER VOLTAGE	CH1:5.75 ~ 6.75VDC											
		Protection type : Shut down o/p voltage, re-power on to recover											
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)											
	WORKING HUMIDITY	20 ~ 90% RH non-condensing											
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)											
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes											
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 Approved											
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC											
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC											
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B											
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3											
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A											
OTHERS	MTBF	274.5K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	199*110*50mm (L*W*H)											
	PACKING	0.83Kg; 16pcs/14.2Kg/0.95CUFT											
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment.												

■ Mechanical Specification

Case No. 906 Unit:mm

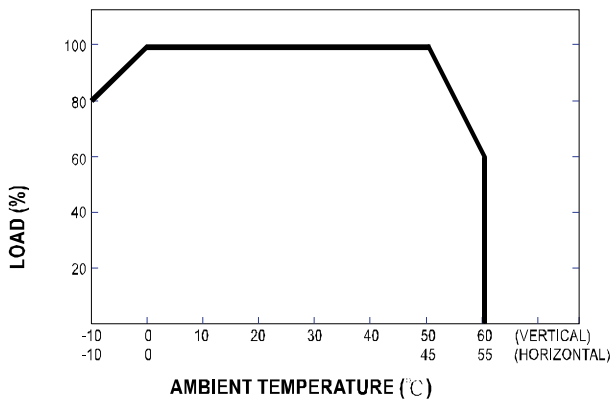


Terminal Pin. No Assignment

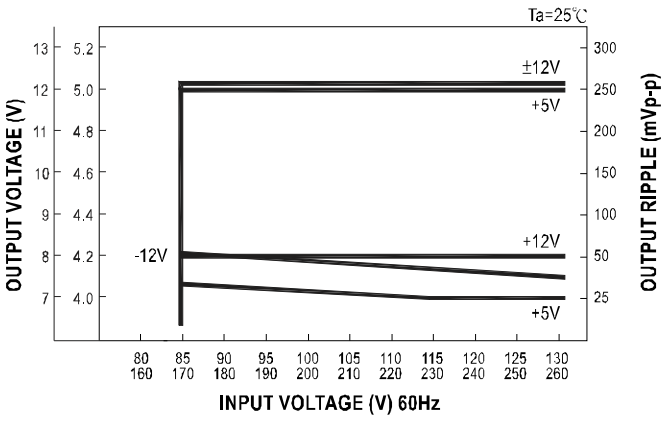
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5,6	DC OUTPUT
2	AC/N	7	DC OUTPUT COM
3	FG ⏚	8	DC OUTPUT +5V

Pin No. \ MODEL	T-120A	T-120B	T-120C	T-120D
4	+12V	+12V	+15V	+24V
5	NC	-12V	-15V	+12V
6	-5V	NC	NC	NC

■ Derating Curve



■ Static Characteristics(B)



NIETZ 120W Single Output Industrial DIN RAIL Power Supply WDR-120 series

Features :

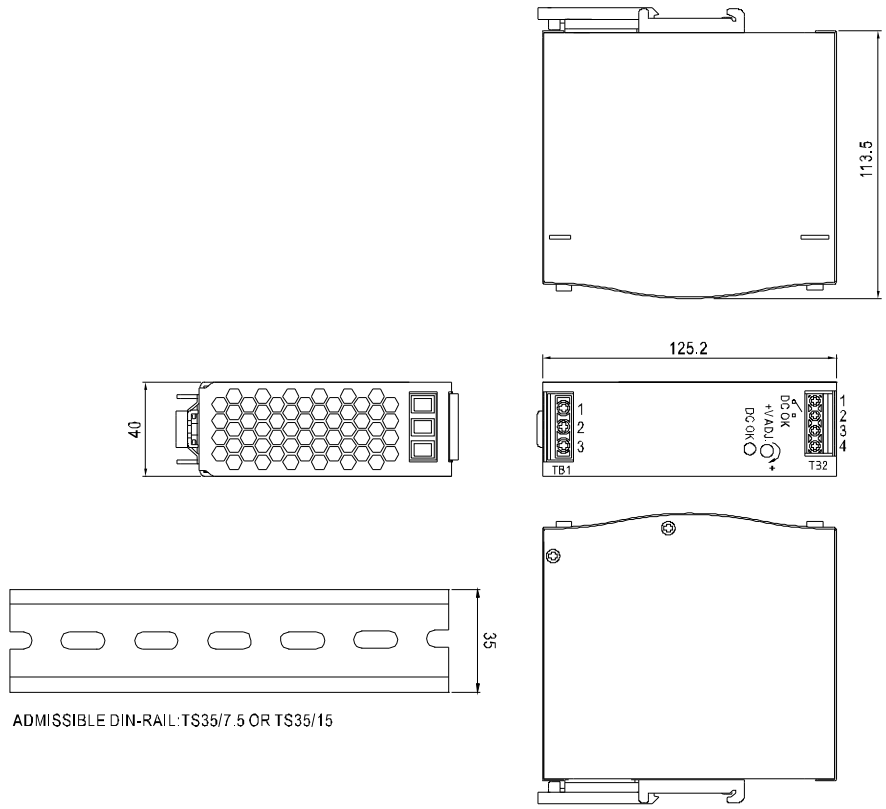
- Single and two phase wide input range 180 ~ 550VAC
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- 100% full load burn-in test
- Built-in DC OK relay contact

SPECIFICATION

MODEL		WDR-120-12	WDR-120-24	WDR-120-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	10A	5A	2.5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A	0 ~2.5A
	RATED POWER	120W	120W	120W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	12 ~ 15V	24 ~ 29V	48 ~ 58V
	VOLTAGE TOLERANCE Note.3	±1.5%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
	SETUP, RISE, HOLD UP TIME	2000ms, 70ms, 50ms/400VAC 2000ms, 70ms, 10ms/230VAC at full load		
INPUT	VOLTAGE RANGE	180 ~ 550VAC 254 ~ 780VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	EFFICIENCY (Typ.)	89.5% / 400V	91% / 400V	92% / 400V
	AC CURRENT	0.55A/400VAC 1.2A/230VAC		
	INRUSH CURRENT (max.)	COLD START 50A		
	LEAKAGE CURRENT	<3.5mA / 530VAC		
PROTECTION	OVERLOAD	105 ~ 130% rated output power		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	16 ~ 18V	31 ~ 37V	60 ~ 67V
		Protection type : Shut down o/p voltage, re-power on to recover		
	OVER TEMPERATURE	105℃±5℃(12V),110℃±5℃(24V) (TSW1) detect on heatsink of power transistor ; 100℃±5℃(48V) (TSW1) detect on heatsink of power diode		
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down		
FUNCTION	DC OK SIGNAL	Relay contact rating(max.) : 30V / 1A resistive		
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃ (Refer to output load derating curve)		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	Component: 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting clip: Compliance to IEC60068-2-6		
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508 approved, IEC60950-1 CB approved by SIQ, design refer to GL		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH		
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11), EN55022 (CISPR22), EN61204-3 Class B		
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, ENV50204, EN61204-3, EN61000-6-2 (EN50082-2), heavy industry level, criteria A		
OTHERS	MTBF	268Khrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	40*125.2*113.5mm (W*H*D)		
	PACKING	0.65Kg; 20pcs/14Kg/1.16CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. 5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quick may lead to increase of the set up time.			

■ Mechanical Specification

Case No.992B Unit:mm



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

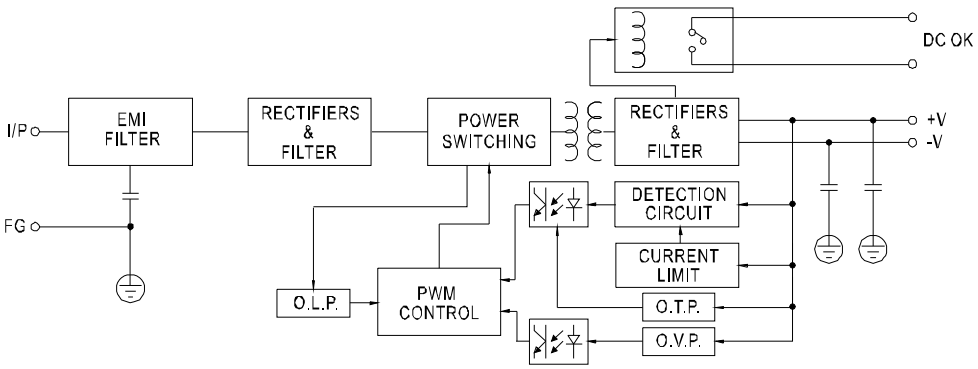
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/L2
3	AC/L1

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	Relay Contact
3	DC OUTPUT -V
4	DC OUTPUT+V

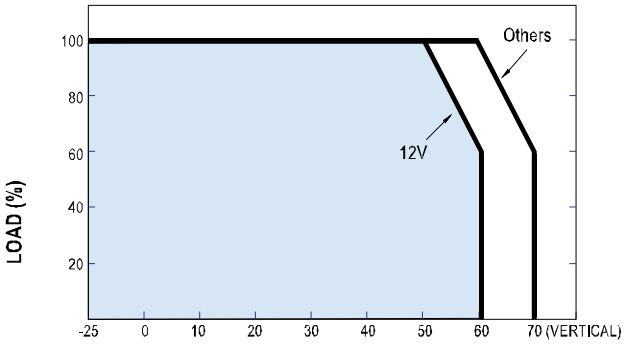
■ Block Diagram



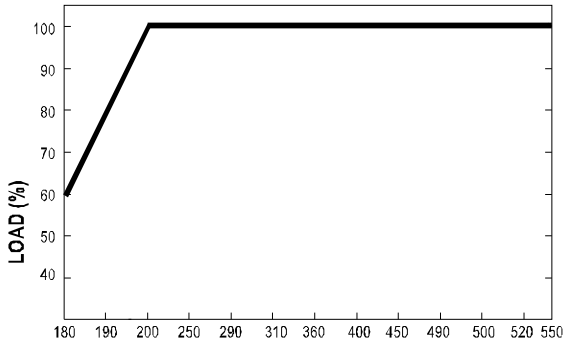
■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Static Characteristics



NIETZ 240W Single Output Industrial DIN RAIL Power Supply **WDR-240 series**

■ Features :

- Single and two phase wide input range 180~550VAC
- High efficiency 91% and low power dissipation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test

SPECIFICATION

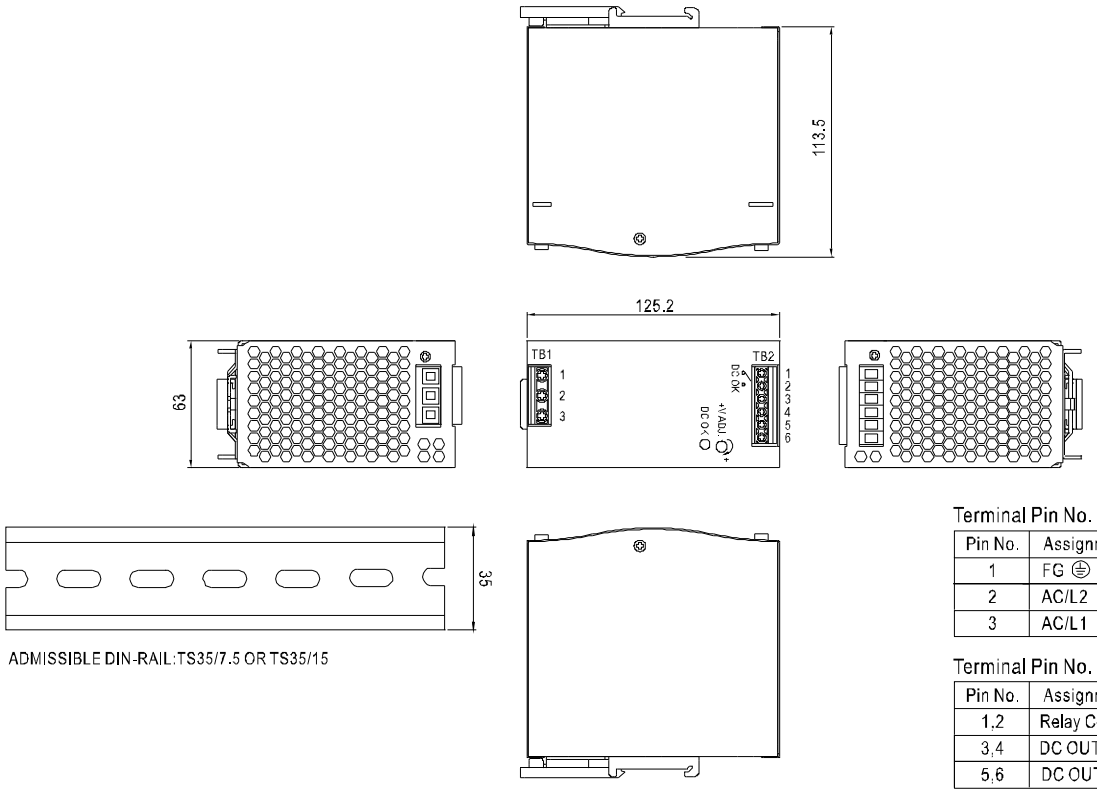
MODEL		WDR-240-24	WDR-240-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	10A	5A
	CURRENT RANGE	0 ~ 10A	0 ~ 5A
	RATED POWER	240W	240W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 150ms/400VAC 1500ms, 150ms/230VAC at full load	
	HOLD UP TIME (Typ.)	18ms / 400VAC 18ms / 230VAC at full load	
INPUT	VOLTAGE RANGE Note.6	180 ~ 550VAC 254 ~ 780VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	91%	
	AC CURRENT (Typ.)	1A/400VAC 2A/230VAC	
	INRUSH CURRENT (Typ.)	COLD STAR 50A	
	LEAKAGE CURRENT	<3.5mA / 530VAC	
PROTECTION	OVERLOAD	105 ~ 130% rated output power	
		Protection type : Constant current limiting, unit will shut down after 3 sec. , auto-recovery after 1 minute if the fault condition is removed	
	OVER VOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type : Shut down o/p voltage, auto-recovery after 1 minute if the fault condition is removed	
	OVER TEMPERATURE	90℃±5℃ (TSW) detect on heatsink of power switch	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load	
ENVIRONMENT	WORKING TEMP. Note.5	-30 ~ +70℃ (Refer to output load derating curve)	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508 approved, IEC60950-1 CB approved by SIQ, design refer to GL	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃ / 70% RH	
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22), EN61204-3 Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, ENV50204, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A approved	
OTHERS	MTBF	141.1Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	63*125.2*113.5mm (W*H*D)	
	PACKING	1.06Kg; 12pcs/13.7Kg/1.06CUFT	

NOTE

1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended.
6. Derating may be needed under low input voltage. Please check the derating curve for more details.

■ Mechanical Specification

Case No. 979B Unit:mm



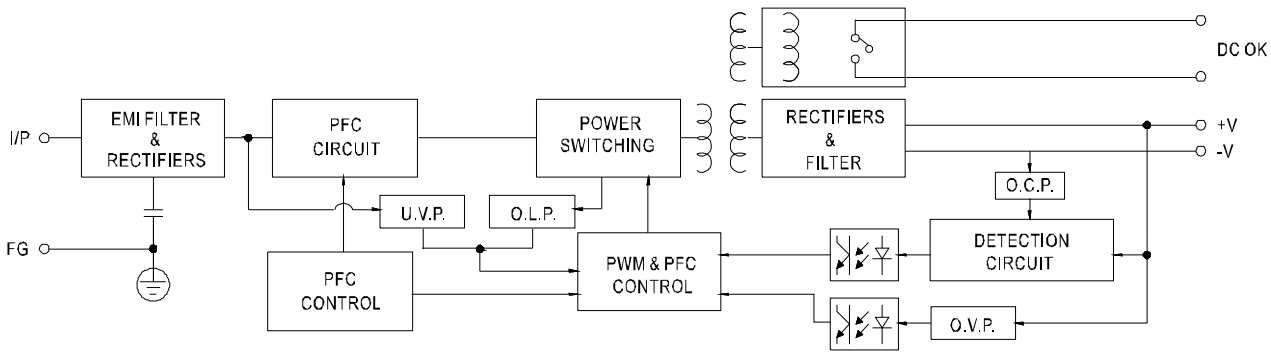
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/L2
3	AC/L1

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	Relay Contact
3,4	DC OUTPUT +V
5,6	DC OUTPUT -V

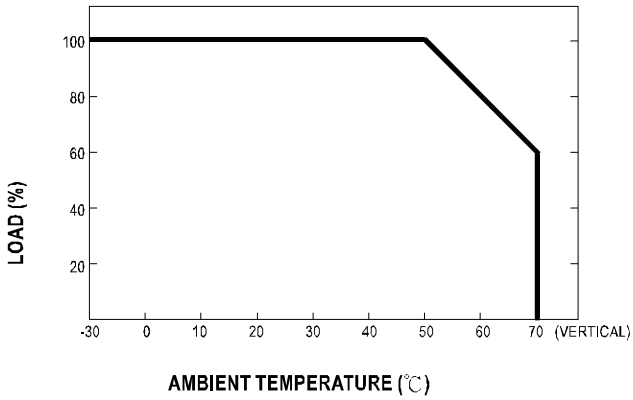
■ Block Diagram



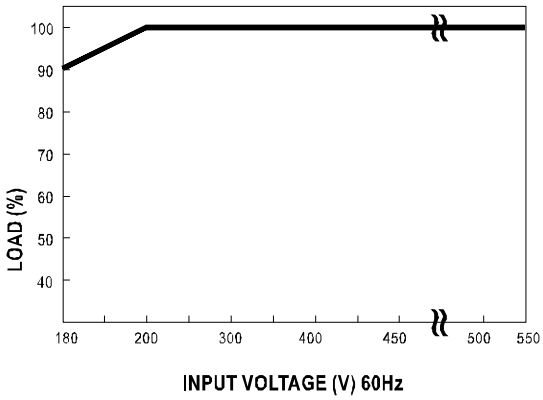
■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Output derating VS input voltage



NIETZ 480W Single Output Industrial DIN RAIL Power Supply **WDR-480 series**

Features :

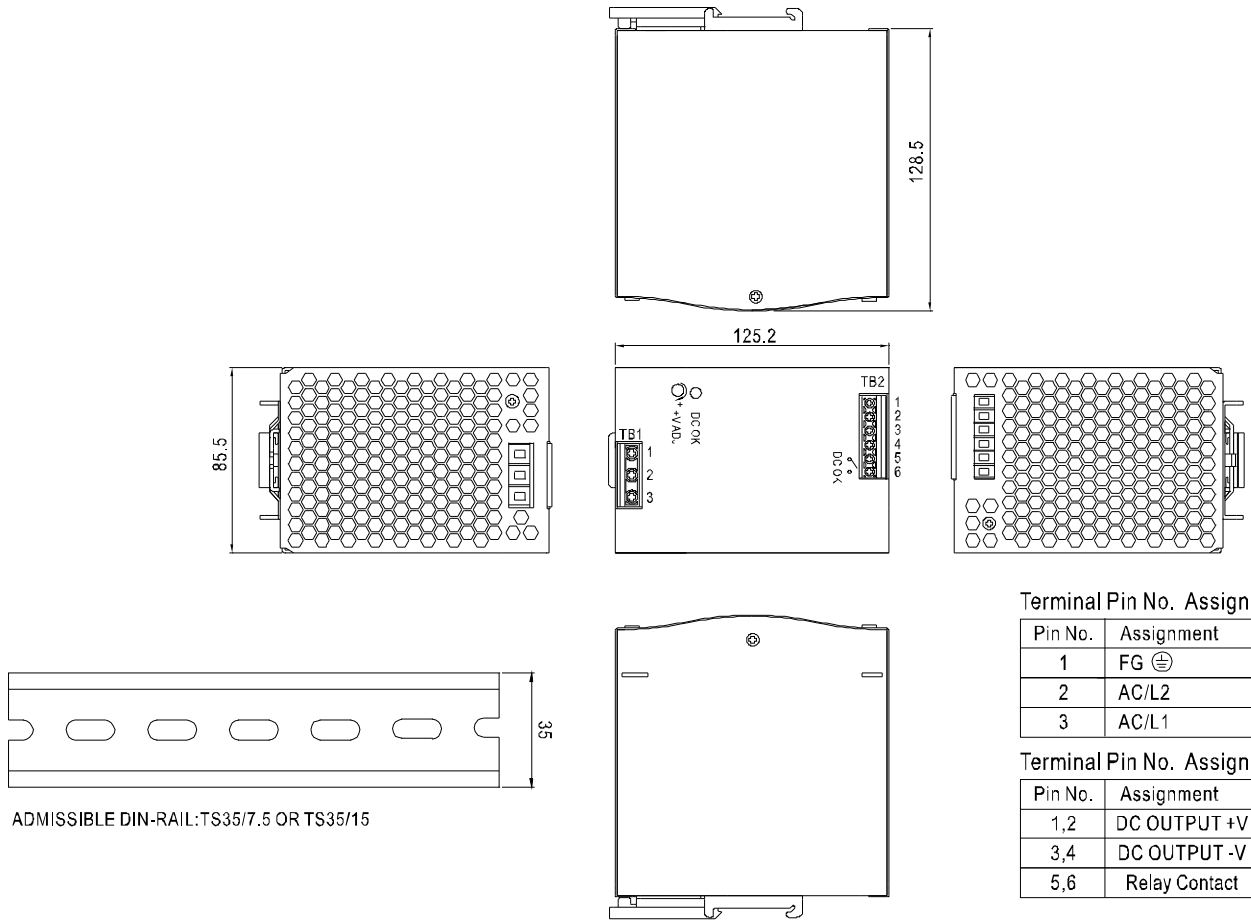
- Single and two phase wide input range 180~550VAC
- High efficiency 93% and low power dissipation
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- EN61000-6-2(EN50082-2) industrial immunity level
- Built-in DC OK relay contact
- 100% full load burn-in test

SPECIFICATION

MODEL		WDR-480-24	WDR-480-48
OUTPUT	DC VOLTAGE	24V	48V
	RATED CURRENT	20A	10A
	CURRENT RANGE	0 ~ 20A	0 ~ 10A
	RATED POWER	480W	480W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	24 ~ 28V	48 ~ 55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
	SETUP, RISE TIME	800ms, 150ms/400VAC 2000ms, 150ms/230VAC at full load	
	HOLD UP TIME (Typ.)	18ms / 400VAC 16ms / 230VAC at full load	
INPUT	VOLTAGE RANGE Note.6	180 ~ 550VAC 254 ~ 780VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	92%	93%
	AC CURRENT (Typ.)	1.6A/400VAC 4A/230VAC	
	INRUSH CURRENT (Typ.)	COLD STAR 50A	
	LEAKAGE CURRENT	<3.5mA / 530VAC	
PROTECTION	OVERLOAD	105 ~ 130% rated output power	
		Protection type : Constant current limiting, unit will shut down after 3 sec. ,auto-recovery after 1 minute if the fault condition is removed	
	OVER VOLTAGE	29 ~ 33V	56 ~ 65V
		Protection type : Shut down o/p voltage, auto-recovery after 1 minute if the fault condition is removed	
	OVER TEMPERATURE	95℃±5℃ (TSW) detect on heatsink of power switch	
		Protection type : Shut down o/p voltage, recovers automatically after temperature goes down	
FUNCTION	DC OK REALY CONTACT RATINGS (max.)	60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load	
ENVIRONMENT	WORKING TEMP. Note.5	-30 ~ +70℃ (Refer to output load derating curve)	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)	
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6	
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508 approved, IEC60950-1 CB approved by SIQ, design refer to GL	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25℃ / 70% RH	
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22), EN61204-3 Class B	
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, ENV50204, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A approved	
OTHERS	MTBF	112.8Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	85.5*125.2*128.5mm (W*H*D)	
	PACKING	1.7Kg; 8pcs/14.6Kg/0.9CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Installation clearances : 40mm on top, 20mm on the bottom, 5mm on the left and right side are recommended when loaded permanently with full power. In case the adjacent device is a heat source, 15mm clearance is recommended. 6. Derating may be needed under low input voltage. Please check the derating curve for more details.	

■ Mechanical Specification

Case No.984B Unit:mm



ADMISSIBLE DIN-RAIL:TS35/7.5 OR TS35/15

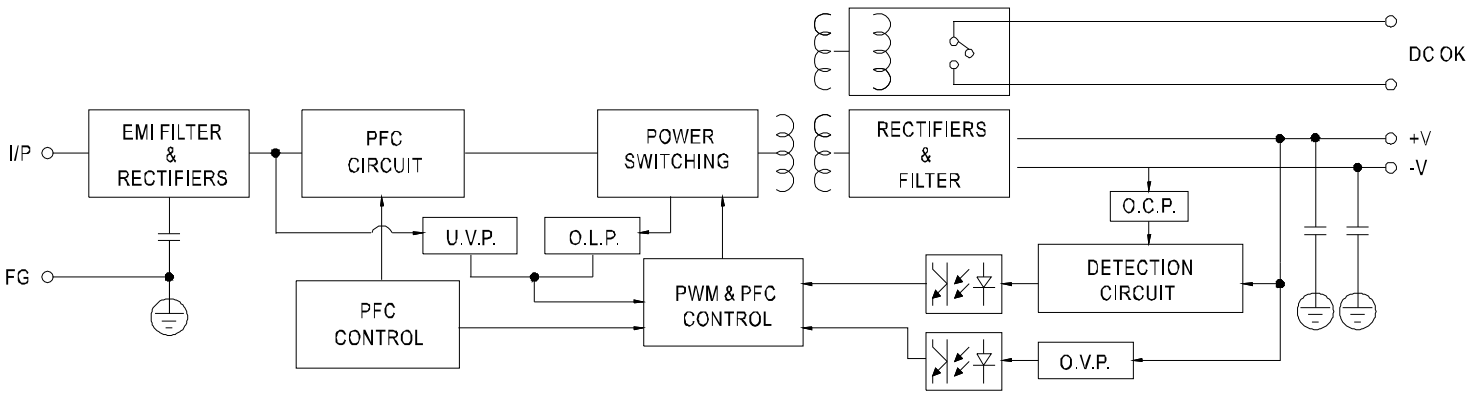
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/L2
3	AC/L1

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact

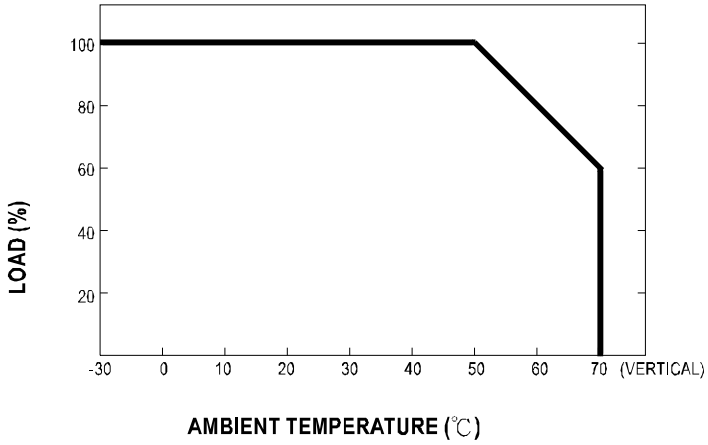
■ Block Diagram



■ DC OK Relay Contact

Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

■ Derating Curve



■ Output derating VS input voltage