

150W Single Output Switching Power Supply

■ 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
- 3 years warranty



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.

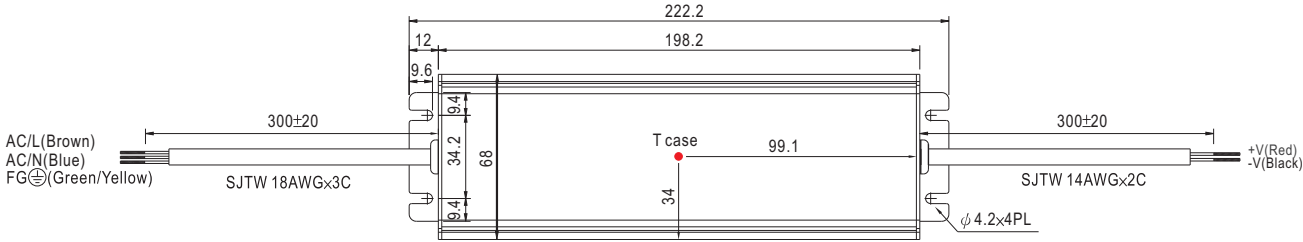
SPECIFICATION

		□	□	□	□	□	□	□	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	48V	
	CONSTANT CURRENT REGION <small>Note.4</small>	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.) <small>Note.2</small>	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	
	VOLTAGE ADJ. RANGE <small>Note.6</small>	9 ~ 13V	13 ~ 17V	17 ~ 22V	22 ~ 27V	26 ~ 32V	31 ~ 41V	40 ~ 56V	
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type and C type only							
		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 <small>Note.3</small>	±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 <small>Note.5</small>	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(twidth=595μs measured at 50% Ipeak) at 230VAC							
	LEAKAGE CURRENT	<1mA / 240VAC							
PROTECTION	OVER CURRENT (Typ.) <small>Note.4</small>	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 ~ 38V	42 ~ 48V	59 ~ 70V	
		Protection type : Shut down and latch off o/p voltage, re-power on to recover							
	OVER TEMPERATURE	100°C ±10°C (RTH2) Protection type : Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS <small>Note.7</small>	UL8750, CSA C22.2 No. 250.0-08, UL1012, CAN/CSA-C22.2 No. 107.1-01, EN61347-1, EN61347-2-13 independent (except for CLG-150 C type), UL60950-1, TUV EN60950-1, IP65 or IP67, J61347-1(option, except for CLG-150 C type), J61347-2-13 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 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	303.7K hrs min. MIL-HDBK-217F (25°C)							
	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	<ol style="list-style-type: none"> 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. 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. A type and C type 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-quality EMC Directive on the complete installation again. 								

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Mechanical Specification

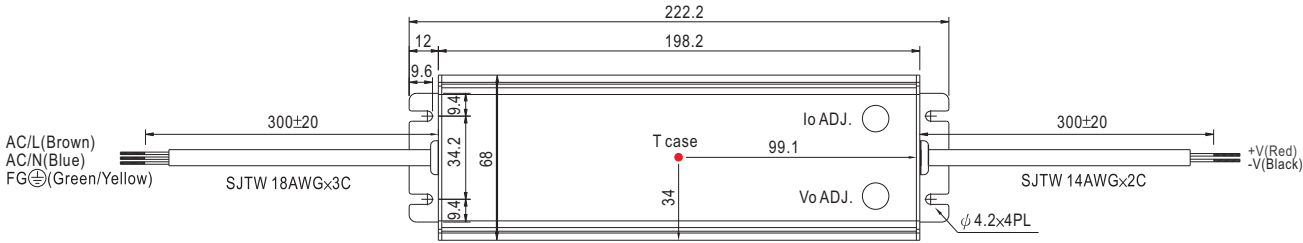
Case No. 954A Unit:mm



※ T case: Max. Case Temperature.



※IP67 rated. Cable for I/O connection.

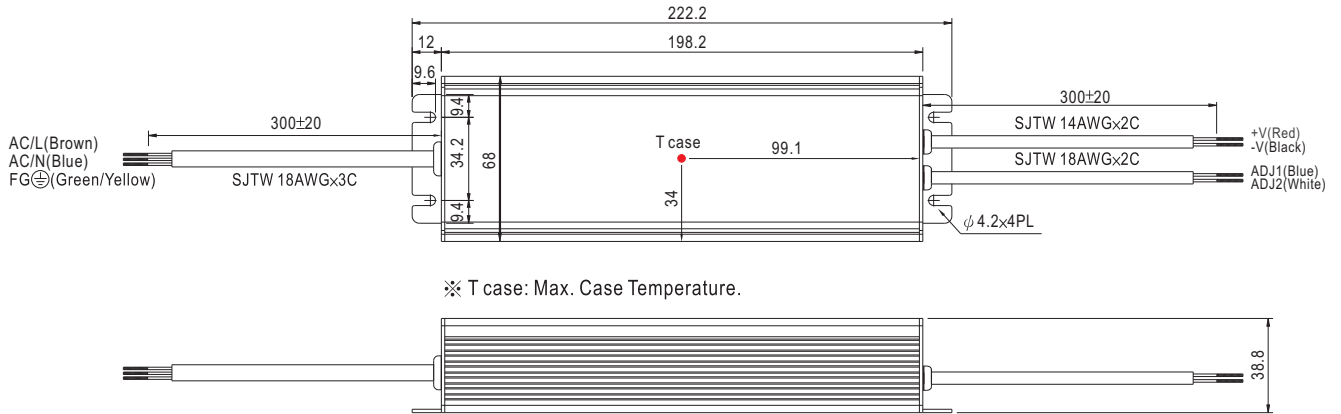


※ T case: Max. Case Temperature.



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

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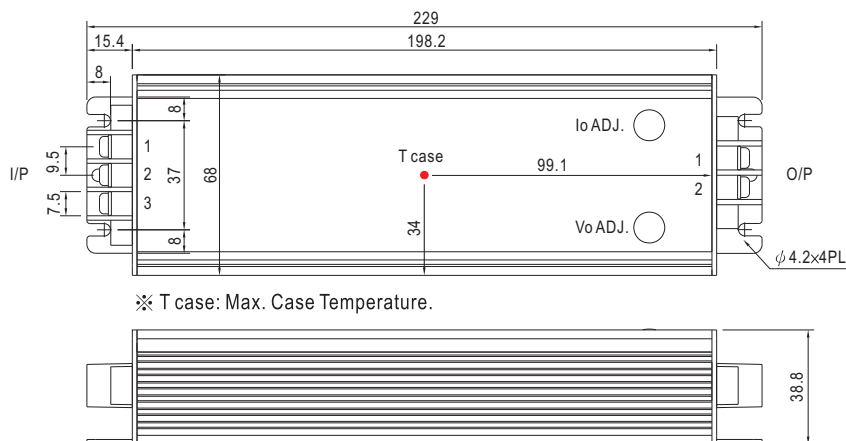


※ T case: Max. Case Temperature.

※ 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%



※ T case: Max. Case Temperature.

AC Input Terminal Pin No. Assignment

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

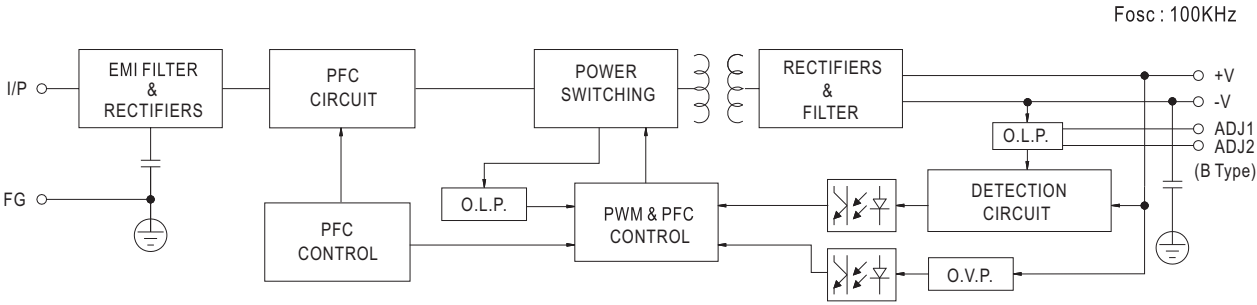
DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1	+V
2	-V

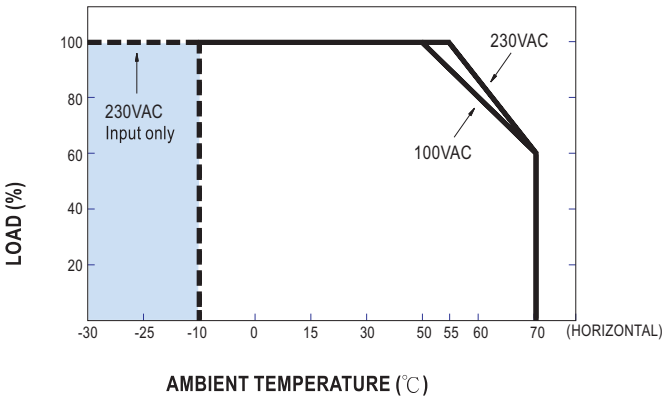
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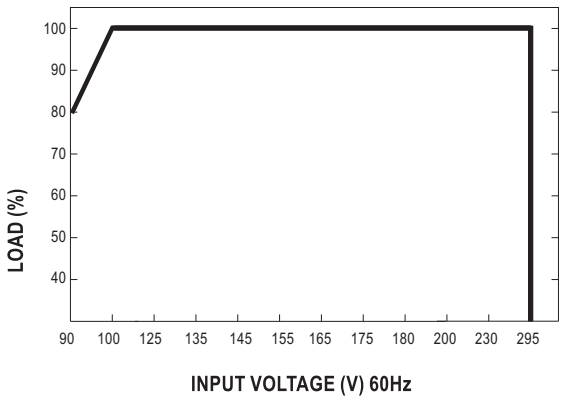
Block Diagram



Derating Curve

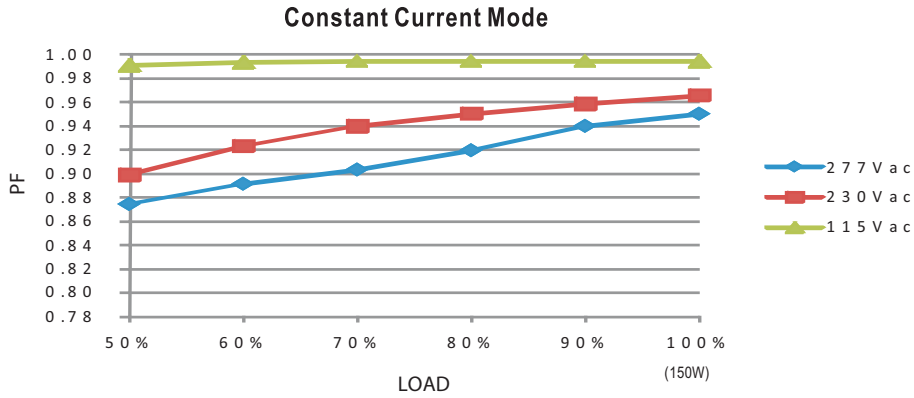


Static Characteristics

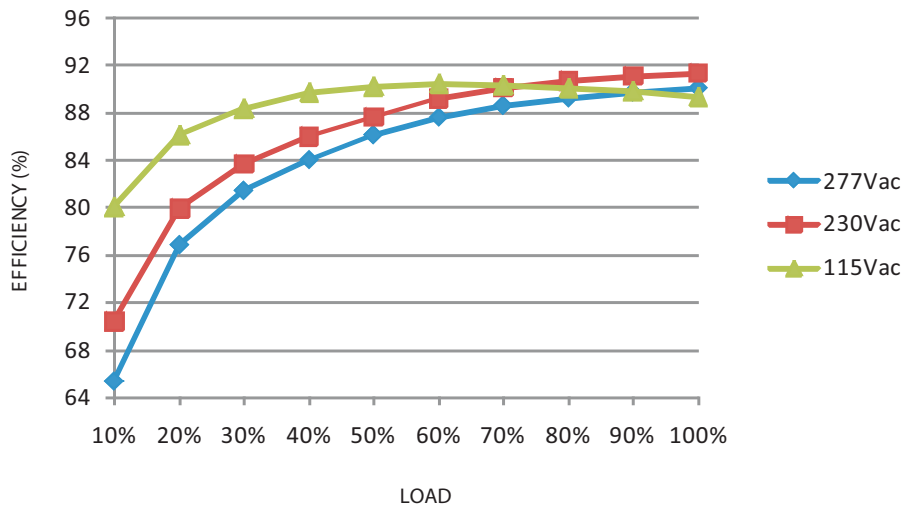


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Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

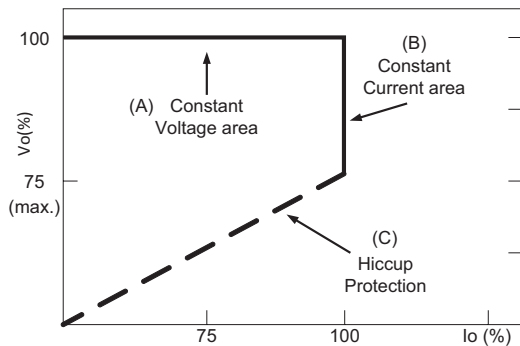


DRIVING METHODS OF LED MODULE

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.

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