45W Single Output LED Power Supply

PLP-45 series

Features :

- Universal AC input / Full range
- Protections: Short circuit / Over current / Over voltage
- Built-in active PFC function
- Cooling by free air convection
- Output current level adjustable
- 100% full load burn-in test
- High reliability
- Suitable for built-in applications of LED lighting
- 2 years warranty

(for 48V only) (except for 48V)

SPECIFICATION

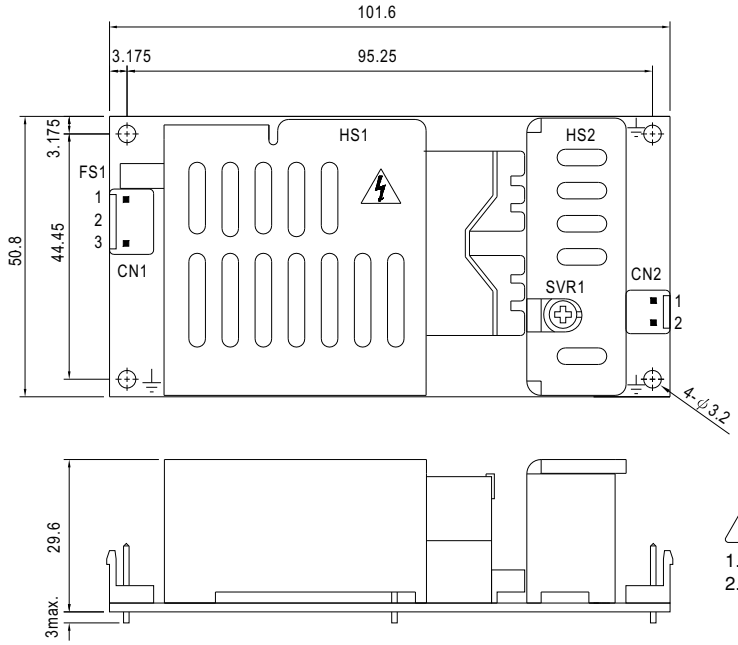
MODEL		PLP-45-12	PLP-45-24	PLP-45-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	CONSTANT CURRENT OPERATION VOLTAGE Note.5	9 ~ 12V	18 ~ 24V	36 ~ 48V
	RATED CURRENT	3.8A	1.9A	0.95A
	CURRENT RANGE	0 ~ 3.8A	0 ~ 1.9A	0 ~ 0.95A
	RATED POWER	45.6W	45.6W	45.6W
	RIPPLE & NOISE (max.) Note.2	4.2Vp-p	3.8Vp-p	4.8Vp-p
	CURRENT ADJ. RANGE	2.85 ~ 3.8A	1.425 ~ 1.9A	0.715 ~ 0.95A
	VOLTAGE TOLERANCE Note.3	±10%		
	LINE REGULATION	±3.0%		
	LOAD REGULATION	±5.0%		
	SETUP TIME	1000ms / 230VAC 2000ms / 115VAC at full load		
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 127 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF≧0.9 at 75 ~ 100% load, 115VAC / 230VAC		
	EFFICIENCY (Typ.)	86%	89%	89%
	AC CURRENT (Typ.)	0.6A/115VAC 0.3A/230VAC		
	INRUSH CURRENT (max.)	42A/230VAC		
	LEAKAGE CURRENT	<0.75mA / 240VAC		
PROTECTION	OVER CURRENT Note.5	100 ~ 110%		
		Protection type : Constant current limiting, recovers automatically after fault condition is removed		
	SHORT CIRCUIT	Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	15 ~ 18V	28 ~ 35V	57 ~ 63V
		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, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC	SAFETY STANDARDS	UL8750, CAN/CSA C22.2 No. 250.0-08(except for 48V),TUV EN61347-1, EN61347-2-13 approved ; design refer to UL60950-1		
	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, 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	586.5Khrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	101.6*50.8*29.6mm (L*W*H)		
	PACKING	0.16Kg; 96pcs/16.4Kg/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. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. 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.
6. Heat sink HS1,HS2 can not be shorted.
7. Heat sink HS1 must have safety isolation distance with system case.
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. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

■ Mechanical Specification

Unit:mm



1.HS1,HS2 can not be shorted.
2.HS1 must have safety isolation distance with system case.

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

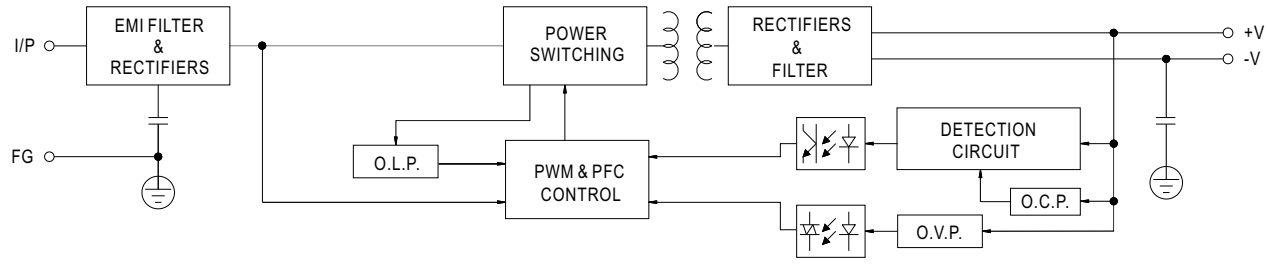
Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/N		

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

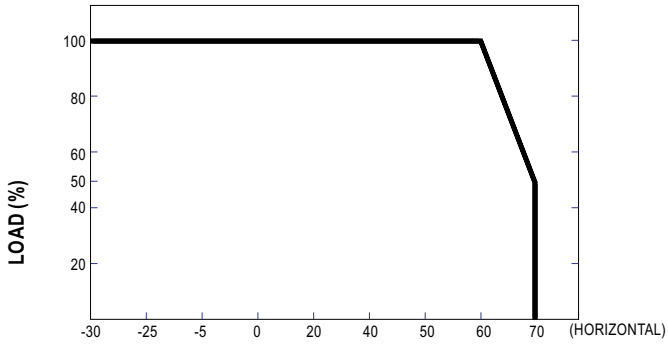
Pin No.	Assignment	Mating Housing	Terminal
1	+V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	-V		

■ Block Diagram

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

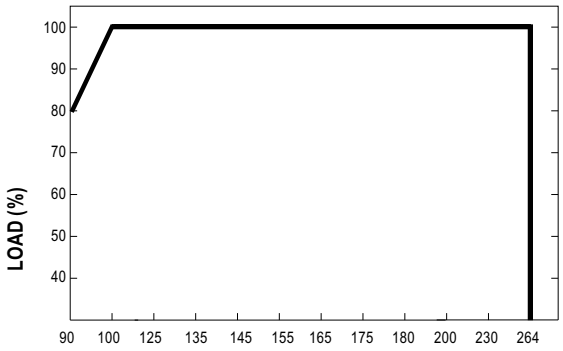


■ Derating Curve



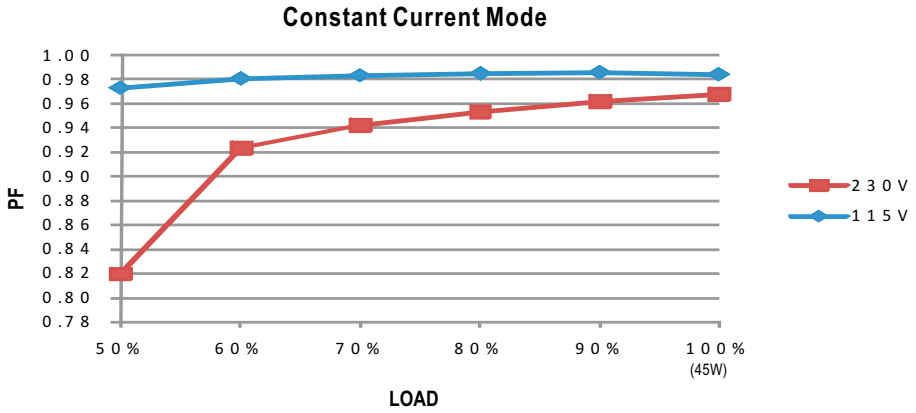
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



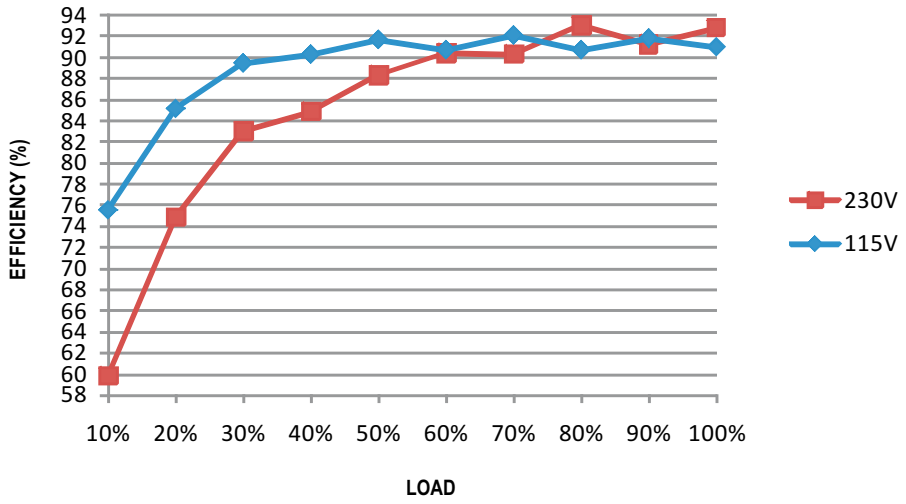
INPUT VOLTAGE (V) 60Hz

■ Power Factor Characteristic



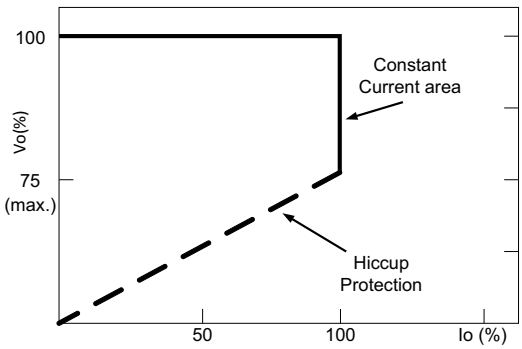
■ EFFICIENCY vs LOAD (48V Model)

PLP-45 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