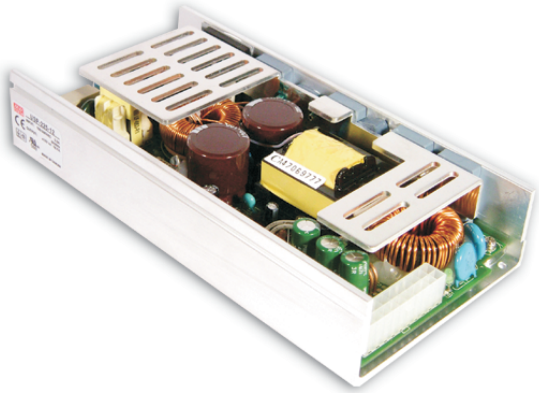
225W Single Output with PFC Function

USP-225 series



Features :

- Universal AC input / Full range
- Built in active PFC circuit compliance to EN61000-3-2
- Protections:Short circuit/Over load/Over voltage/Over temperature
- Free air convection for 150W and forced air convection for 225W
- High power density 4.7w/in^3
- Active AC surge current limiting
- U-bracket low profile:38mm
- 3 years warranty

SPECIFICATION

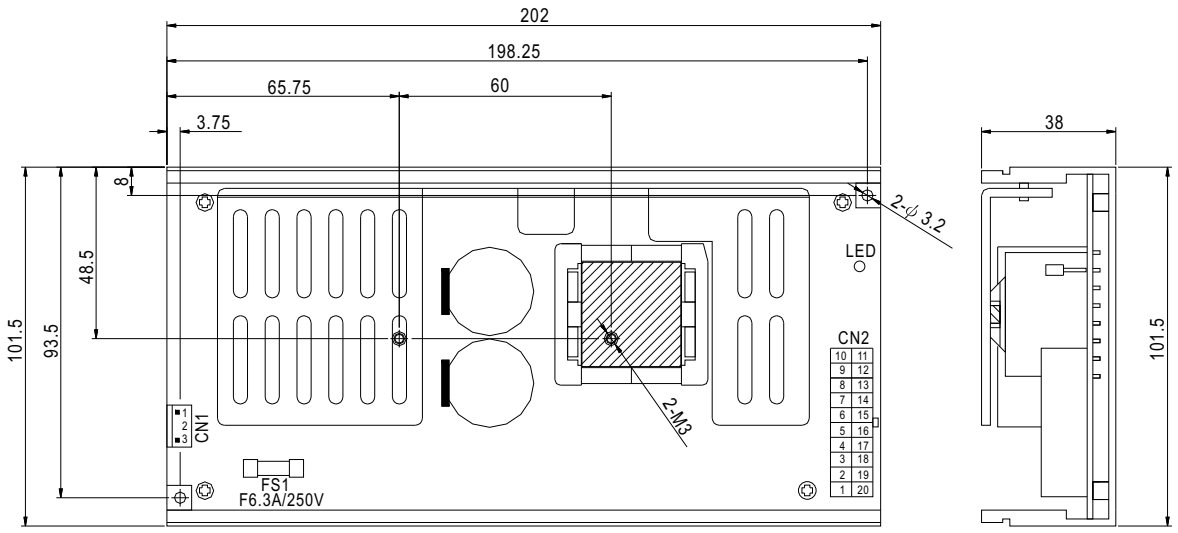
MODEL		USP-225-3.3	USP-225-5	USP-225-12	USP-225-15	USP-225-24	USP-225-48
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V	24V	48V
	RATED CURRENT	40A	40A	18.7A	15A	9.4A	4.7A
	CURRENT RANGE	0 ~ 40A	0 ~ 40A	0 ~ 18.7A	0 ~ 15A	0 ~ 9.4A	0 ~ 4.7A
	RATED POWER	132W	200W	224.4W	225W	225.6W	225.6W
	RIPPLE & NOISE (max.) Note.2	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	250mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.6V	4.5 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	LINE REGULATION	±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%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load					
	HOLD TIME (Typ.)	22ms/230VAC 22ms/115VAC at full load					
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.93/230VAC PF>0.97/115VAC at full load					
	EFFICIENCY (Typ.)	72%	77%	85%	84%	86%	86%
	AC CURRENT (Typ.) 115VAC	2.2A	3.3A				
	AC CURRENT (Typ.) 230VAC	1.1A	1.6A				
	INRUSH CURRENT (Typ.)	15A/115VAC 30A/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	3.6 ~ 4.4V	5.5 ~ 7.4V	13.2 ~ 16.3V	16.5 ~ 20.2V	26.4 ~ 32.4V	52.8 ~ 64.8V
		Protection type : Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	95℃±5℃ (RTH2 : 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 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, 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, Light industry level, criteria A					
OTHERS	MTBF	220K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	202*101.5*38mm (L*W*H)					
	PACKING	0.85Kg; 16pcs/14.6Kg/0.76CUFT					

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. 928 Unit:mm



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

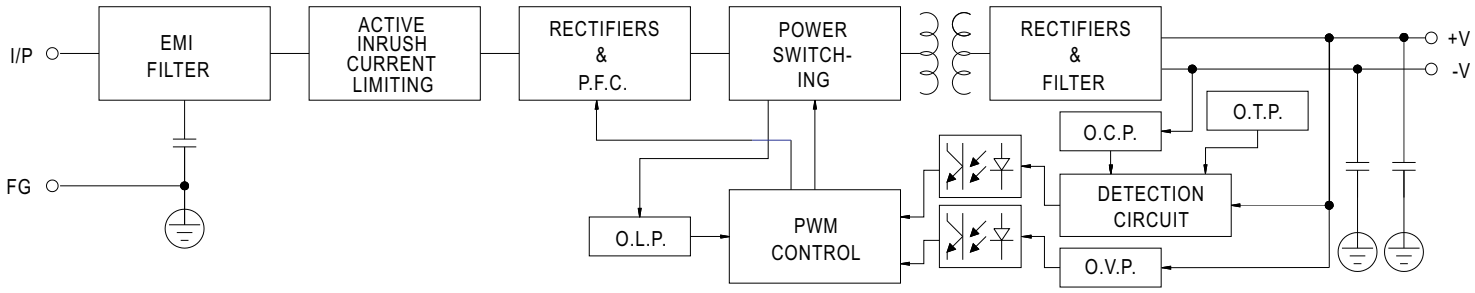
Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	No Pin		
3	AC/L		

DC Output Connector (CN2) : MOLEX 39-29-9206 or equivalent

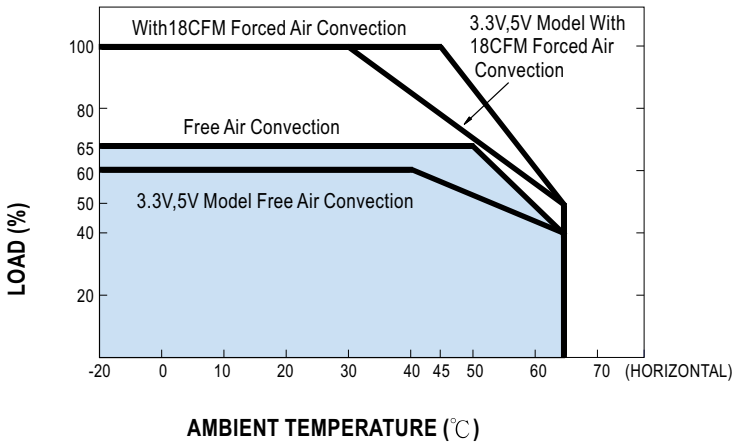
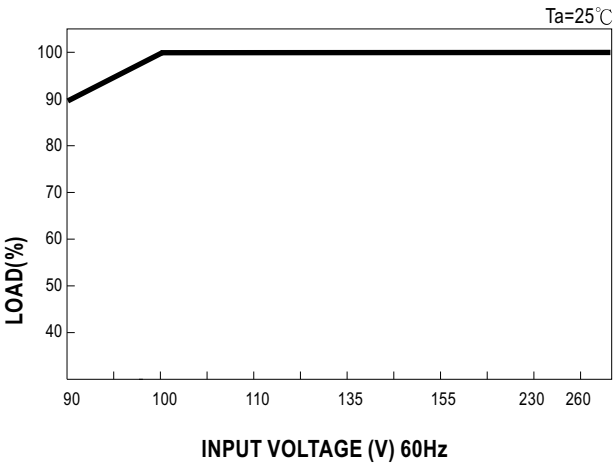
Pin No.	Assignment	Mating Housing	Terminal
1~5	+V	MOLEX 5557 or equivalent	MOLEX 5556 or equivalent
6~15	-V		
16~20	+V		

■ Block Diagram

fosc : 100KHz



■ Derating Curve



■ Static Characteristics (5V)