

■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at PFC:67KHz PWM:134KHz
- 3 years warranty

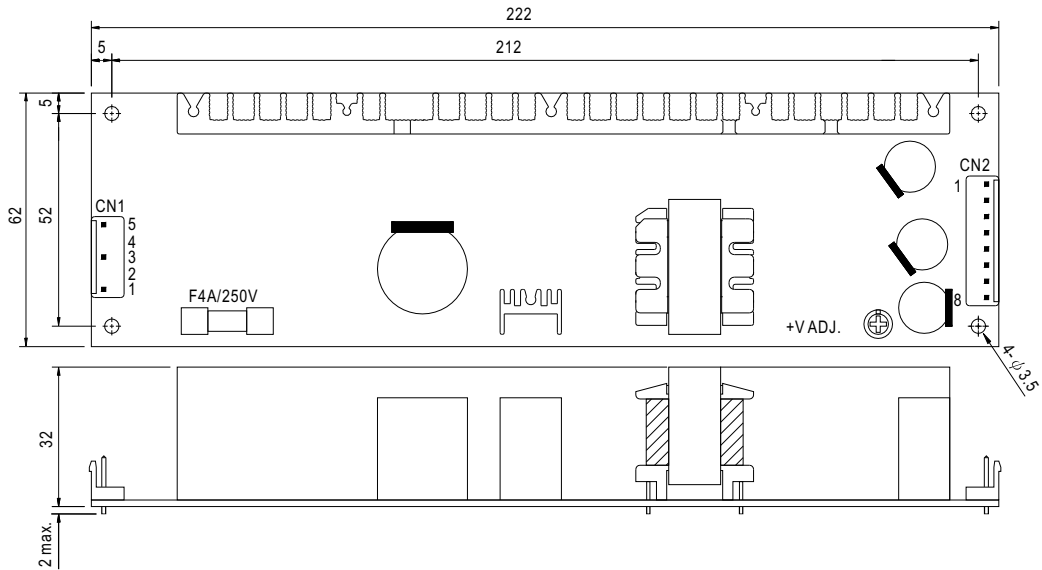


SPECIFICATION

MODEL	LPP-100-3.3	LPP-100-5	LPP-100-7.5	LPP-100-12	LPP-100-13.5	LPP-100-15	LPP-100-24	LPP-100-27	LPP-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 ~ 13.3A	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/230VAC		1200ms, 30ms/115VAC at full load							
HOLD UP TIME (Typ.)	28ms/230VAC		28ms/115VAC at full load								
INPUT	VOLTAGE RANGE Note.5	85 ~ 264VAC		120 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR (Typ.)	PF>0.95/230VAC		PF>0.98/115VAC at full load							
	EFFICIENCY(Typ.)	69%	75%	76%	79%	79%	80%	83%	83%	83%	
	AC CURRENT (Typ.)	1.7A/115VAC		0.75A/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 ~ 4.45V	5.75 ~ 6.75V	8.6 ~ 10.1V	13.8 ~ 16.2V	15.5 ~ 18.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	31 ~ 36.45V	55.2 ~ 64.8V	
		Protection type : Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-10 ~ +60°C (Refer to output load derating curve)									
	WORKING HUMIDITY	20 ~ 90% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH									
	TEMP. COEFFICIENT	±0.05%/°C (0 ~ 50°C)									
	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 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	224.3Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	222*62*32mm (L*W*H)									
	PACKING	0.51Kg; 24pcs/13.9Kg/1.76CUFT									
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. 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. Derating may be needed under low input voltages. Please check the derating curve for more details. 										

Mechanical Specification

Unit:mm



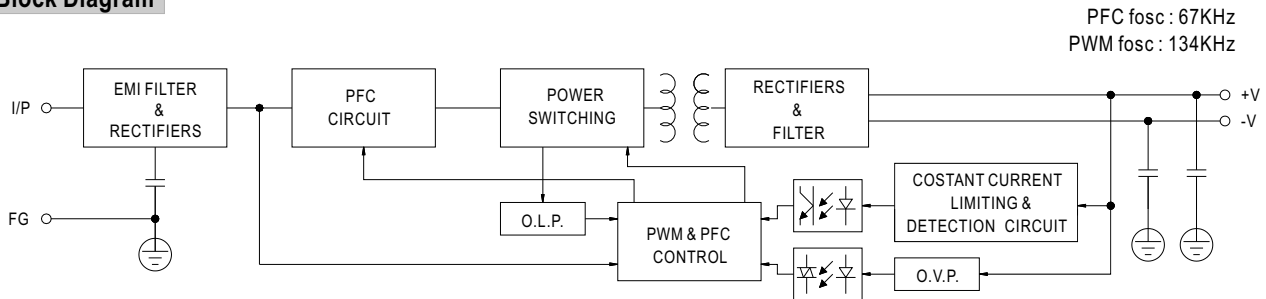
AC Input Connector (CN1) : JST B5P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2,4	No Pin		
3	AC/N		
5	FG \perp		

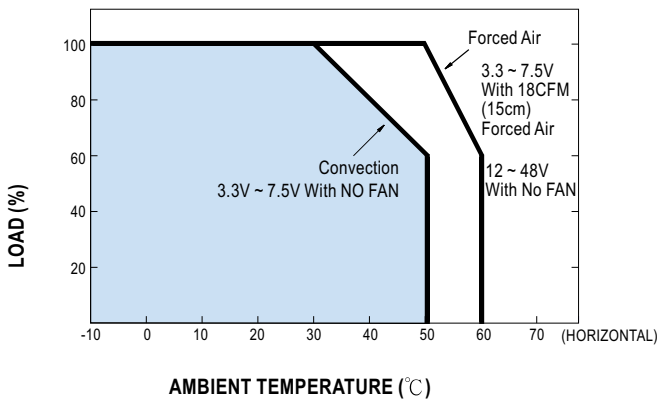
DC Output Connector (CN2) : JST B8P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2,3,4	-V	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
5,6,7,8	+V		

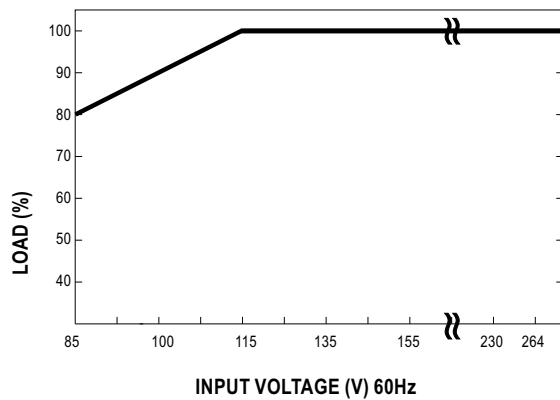
Block Diagram



Derating Curve



Output Derating VS Input Voltage



Quality Engineering Test Report

SERIES: LPP-100 100 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.LPP-100-3.3 3.3V / 20A D.LPP-100-12 12V /8.5A G.LPP-100-24 24V /4.2A

B.LPP-100-5 5V /20A E.LPP-100-13.5 13.5V /7.5A H.LPP-100-27 27V /3.8A

C.LPP-100-7.5 7.5V/13.5A F.LPP-100-15 15V /6.7A I.LPP-100-48 48V /2.1A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85-264VAC O/P:FULL LOAD	G: 62V-264VAC	P
2	LINE REGULATION	I/P:85-264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C:±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G:±0.5% H: ±0.5% I: ±0.5%	A: 0.00% - 0.00% B: 0.00% - 0.00% C: 0.00% - 0.00% D: 0.00% - 0.049% E: 0.00% - 0.00% F: 0.00% - 0.00% G: 0.00% - 0.00% H: 0.00% - 0.00% I: 0.00% - 0.03.%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±1% B: ±1% C: ±1% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: 0.18% - 0.00% B: 0.00% - 0.00% C: 0.00% - 0.00% D: -0.099% - 0.107% E: -0.04% - 0.04% F: 0.03% - 0.08% G: +0.00% - +0.00% H: 0.00% - 0.02% I: 0.012% - 0.02%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: 0.00% ~ 0.36% B: 0.00% ~ 0.10% C: 0.00% ~ 0.08% D: -0.099% ~ 0.107% E: 0.00% ~ 0.13% F: -0.04% ~ 0.20% G: -0.02% ~ +0.00% H: 0.02% ~ 0.05% I: -0.012% ~ 0.012%	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A:100mV B:100mV C:100mV D:100mV E:100mV F:100mV G:150mV H:150mV I :250mV	A: 33mV B: 29mV C: 18mV D: 12mV E: 15mV F: 15mV G: 21mV H: 19mV I: 24mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 0.75A O/P:FULL LOAD (3.3V:0.6A)	G:0.563A	P
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 40A O/P:FULL LOAD	A:16.859A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC: +10%~-5% A:3.1V~3.6V B:4.7V~5.5V C:7.12V~8.25V D:11.4V~13.2V E:12.8 V~14.8V F:14.2V~16.5V G:22.8V~26.4V H:25.6V~29.7V I :45.6V~52.8V	A:3.04V~3.8V B:4.46V~5.8V C:6.40V~8.93V D:10.266V~13.9V E:10.73V~14.96V F:12.38V~17.56V G:19.37V~27.67V H:19.9V~30V I:39.7V~54.5V	P
9	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:600ms	G:398mS	P
10	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:20mS	G:37.2mS	P
11	EFFICIENCY	I/P:230VAC O/P: FULL LOAD SPEC: A:69% B:75% C:76% D:79% E:79% F:80% G:83% H:83% I :83%	A: 71.05% B: 77.8% C: 79.6% D: 81.3% E: 82.6% F: 82.7% G: 84.24% H: 85.5% I: 84.73%	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:105%~150%	A: 125% B: 127% C: 123% D: 122.6% E: 118% F: 113% G: 138% H: 123% I: 138%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P: 0% LOAD SPEC:110%~135% A:3.63~4.45 V B:5.5~6.75V C:8.25~10.12V D:13.2~16.2V E:14.8~18.2V F:16.5~20.2V G:26.4~32.4V H:29.7~36.4V I:52.8~64.8V	A: 3.98V B: 6.08V C: 9.08V D: 15.5V E: 16.65V F: 19.14V G: 30.1V H: 33.9V I: 61.2V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--< 2mA N-FG--< 2mA	G: L-FG:0.86mA N-FG:0.86mA	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100MOhms MIN. I/P-O/P 500VDC / 100MOhms MIN. I/P-FG 500VDC / 100MOhms MIN.	G: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P

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16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P: 3000VAC/ 60 sec I/P - FG: 1500VAC/60 sec O/P - FG: 500VAC/60sec	G: I/P-O/P 6mA I/P-FG :5.2mA O/P- FG :8.18mA	P																																																
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:25.8°C BURN-IN DURATION : 1.5 hrs	G : NON BREAK	P																																																
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230 VAC O/P:100% LOAD AMBIENT TEMPERATURE:-9.0°C	G : AFTER 3 hrs POWER ON OK	P																																																
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:47.8°C	G : AFTER 16 hrs NON BREAK																																																	
		3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST I/P:272VAC O/P:FULL LOAD AMBIENT TEMPERATURE : 25°C AMBIENT HUMIDITY : 95%	G : AFTER 15 hrs POWER ON/OFF NO BREAK																																																	
19	TEMPERATURE RISE TEST Trise OF PARTS	G: I/P :230VAC AFTER 1.5 hrs BURN-IN O/P :FULL LOAD TA:25.8°C	<table border="1"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>Trise</th> </tr> </thead> <tbody> <tr> <td>BD1</td> <td>BRIDGE DIODE</td> <td>74.7°C</td> <td>48.9°C</td> </tr> <tr> <td>Q2</td> <td>MAIN TRANSISTOR</td> <td>67.3°C</td> <td>41.5°C</td> </tr> <tr> <td>Q1</td> <td>PFC TRANSISTOR</td> <td>67.3°C</td> <td>41.5°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER COIL</td> <td>50.9°C</td> <td>25.1°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER CORE</td> <td>57.2°C</td> <td>31.2°C</td> </tr> <tr> <td>D20</td> <td>O/P DIODE</td> <td>60.7°C</td> <td>34.9°C</td> </tr> <tr> <td>C52</td> <td>O/P FILTER CAPACITOR</td> <td>62.3°C</td> <td>36.5°C</td> </tr> <tr> <td>L2</td> <td>O/P CHOCK</td> <td>53.2°C</td> <td>27.4°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>51.4°C</td> <td>25.6°C</td> </tr> <tr> <td>LF1</td> <td>LINE FILTER COIL</td> <td>47.8°C</td> <td>22°C</td> </tr> <tr> <td>D7</td> <td>PFC DIODE</td> <td>74.6°C</td> <td>48.8°C</td> </tr> </tbody> </table>	POSITION	P/N	TEMP	Trise	BD1	BRIDGE DIODE	74.7°C	48.9°C	Q2	MAIN TRANSISTOR	67.3°C	41.5°C	Q1	PFC TRANSISTOR	67.3°C	41.5°C	T1	MAIN TRANSFORMER COIL	50.9°C	25.1°C	T1	MAIN TRANSFORMER CORE	57.2°C	31.2°C	D20	O/P DIODE	60.7°C	34.9°C	C52	O/P FILTER CAPACITOR	62.3°C	36.5°C	L2	O/P CHOCK	53.2°C	27.4°C	C5	I/P FILTER CAPACITOR	51.4°C	25.6°C	LF1	LINE FILTER COIL	47.8°C	22°C	D7	PFC DIODE	74.6°C	48.8°C	P
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20	LIFE CYCLE	SUPPOSE C52 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25.8°C Tc52:62.3°C Life:75055.6hrs I/P:230VAC O/P:FULL LOAD Ta:47.8°C Tc52:80.8°C Life:16895.8hrs																																																		
21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	G : FUSE : 4A/250V BRIDGE DIODE : D2SB60 LINE FILTER :LF101 TRANSFOMER :TF-682 OUTPUT DIODE :1N5406 OUTPUT CAPACITOR :NIPPON 330uF/35V 105°C LXJ INPUT CAPACITOR : 100uF/400V,85°C USC RUBYCON P.C.B :LPP-100																																																		

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
20000624	R.D. SAMPLE A0009A22 LPP-100-3.3,5,7.5 ,12,13.5,15,24,27,48	PASS	VINCENT	Max Lin
20000920	PRDUCTION SAMPLE A0009A22	PASS	VINCENT	Max Lin
20010222	PRDUCTION SAMPLE A102B19 24V	PASS	SAM	Max Lin
20010407	PRDUCTION SAMPLE A104A08A 12V	PASS	VINCENT	Max Lin
20020605	PRDUCTION SAMPLE A205B23 24V	PASS	VINCENT	Max Lin