

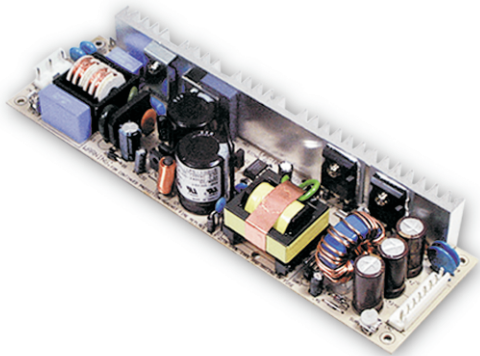
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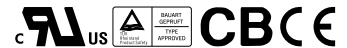
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Jameco Part Number 374345



■ Features :

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

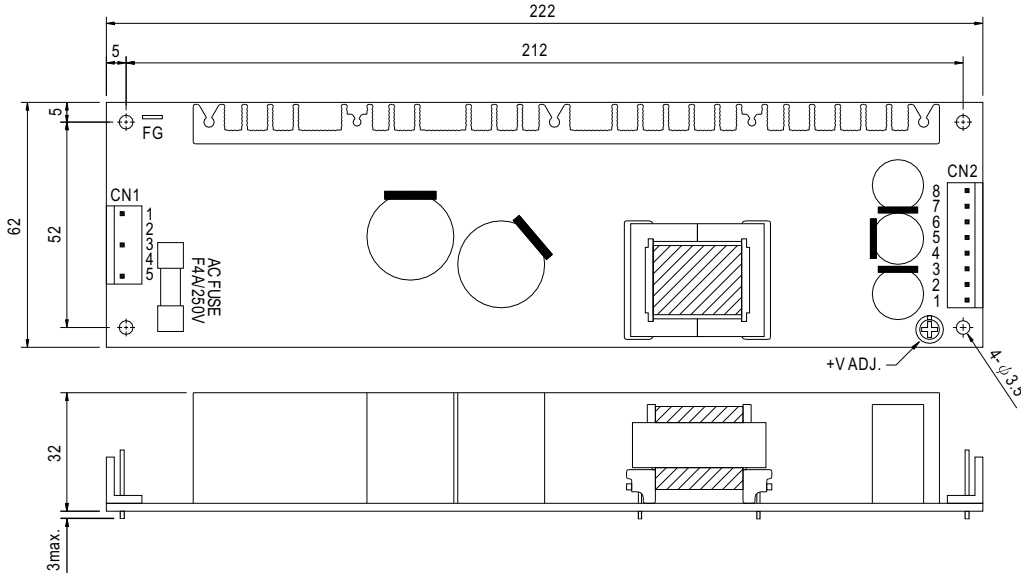


SPECIFICATION

MODEL	LPS-100-3.3	LPS-100-5	LPS-100-7.5	LPS-100-12	LPS-100-13.5	LPS-100-15	LPS-100-24	LPS-100-27	LPS-100-48		
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V	
	RATED CURRENT	20A	20A	13.3A	8.4A	7.5A	6.7A	4.2A	3.8A	2.1A	
	CURRENT RANGE	0 ~ 20A	0 ~ 20A	0 ~ 13.3A	0 ~ 8.4A	0 ~ 7.5A	0 ~ 6.7A	0 ~ 4.2A(6A 10s)	0 ~ 3.8A	0 ~ 2.1A	
	RATED POWER	66W	100W	99.75W	100.8W	101.25W	100.5W	100.8W(144W 10s)	102.6W	100.8W	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	150mVp-p	150mVp-p	200mVp-p	
	VOLTAGE ADJ. RANGE	3 ~ 3.6V	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	±3.0%	±3.0%	±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	±2.0%	±2.0%	±1.5%	±1.5%	±1.5%	±1.5%	±0.5%	±0.5%	±0.5%	
	SETUP, RISE TIME	800ms, 50ms/230VAC		1200ms, 50ms/115VAC at full load							
HOLD UP TIME (Typ.)	20ms/230VAC		20ms/115VAC at full load								
INPUT	VOLTAGE RANGE	88 ~ 132VAC / 176 ~ 264VAC auto switch			248 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY(Typ.)	69%	77%	77%	79%	79%	80%	80%	81%	81%	
	AC CURRENT (Typ.)	2.3A/115VAC		1.5A/230VAC							
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC			60A/230VAC						
	LEAKAGE CURRENT	<1mA/ 240VAC									
PROTECTION	OVERLOAD	105 ~ 140% (+24V: above 6.5A) rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed									
	OVER VOLTAGE	3.8 ~ 4.45V	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									
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 EN61000-4-2,3,4,5,6,11, light industry level, criteria A									
OTHERS	MTBF	203.6Khrs min.		MIL-HDBK-217F (25°C)							
	DIMENSION	222*62*32mm (L*W*H)									
	PACKING	0.45Kg; 24pcs/12.5Kg/1.39CUFT									
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. If the input range 85V-89V, the output load is changed from 0A-rated load, There will be reduced 20V for 1second (LPS-100-24). 6. Mounting holes M1 and M2 should be grounded for EMI purposes. 										

■ Mechanical Specification

Unit:mm



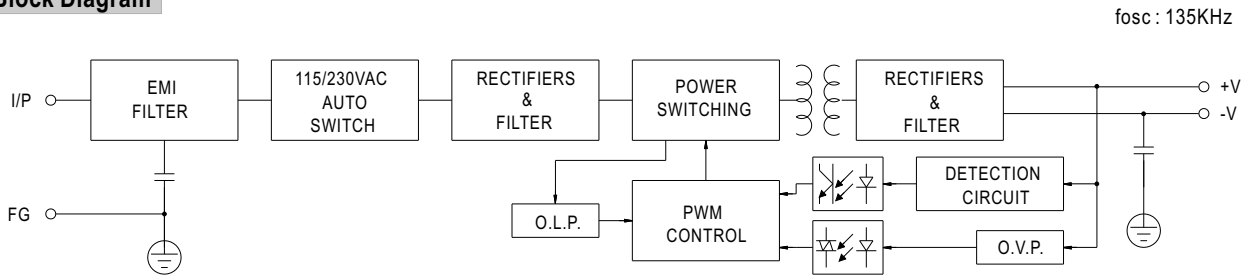
AC Input Connector (CN1) : JST B5P-VH or equivalent

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

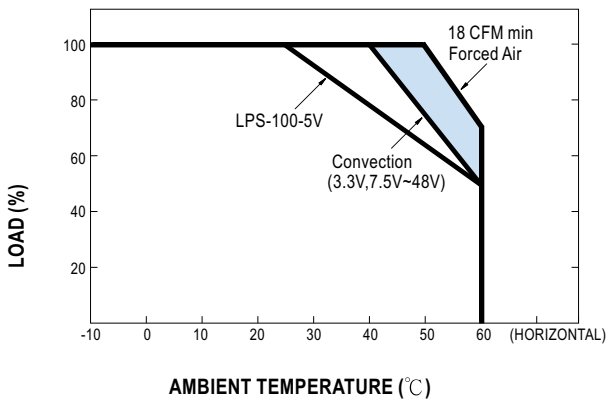
DC Output Connector (CN2) : JST B8P-VH or equivalent

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		

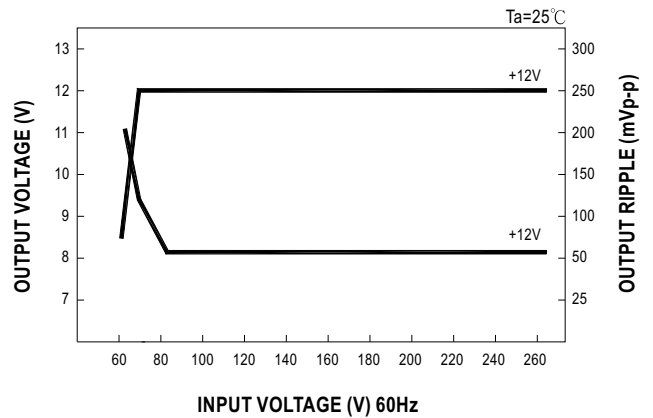
■ Block Diagram



■ Derating Curve



■ Static Characteristics (12V)



Quality Engineering Test Report

SERIES: LPS-100 100.8 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.LPS-100-3.3 3.3V / 20A D.LPS-100-12 12V /8.4A G.LPS-100-24 24V / 4.2A

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

C.LPS-100-7.5 7.5V / 13.3A F.LPS-100-15 15V / 6.7A I. LPS-100-48 48V / 2.1A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:88~132V 176~264V O/P:FULL LOAD	A : 129V~267VAC	P
2	LINE REGULATION	I/P:176~264VAC 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: -0.08% ~ +0.00% D: +0.00% ~ +0.00% E: +0.09% ~ -0.06% F: -0.00% ~ +0.04% G: -0.05% ~ +0.03% H: -0.04% ~ +0.11% I: -0.02% ~ +0.06%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±1.5% D: ±1.5% E: ±1.5% F: ±1.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: -0.18% ~ +0.18% B: -0.35% ~ +0.25% C: -0.33% ~ +0.41% D: -0.10% ~ +0.10% E: -0.04% ~ +0.04% F: -0.12% ~ +0.21% G: -0.03% ~ +0.15% H: -0.15% ~ +0.15% I: -0.06% ~ +0.11%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:176~264VAC SPEC: O/P: 20% LOAD TO FULL LOAD A: ±3% B: ±3% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: +0.00% ~ +0.36% B: -0.76% ~ +0.00% C: -0.59% ~ +0.08% D: -0.10% ~ +0.05% E: +0.00% ~ -0.13% F: -0.33% ~ +0.00% G: -0.13% ~ +0.10% H: -0.02% ~ +0.39% I: -0.19% ~ +0.03%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A:150mV B:100mV C:100mV D:100mV E:100mV F:100mV G:150mV H:150mV I :200mV	A: 26mV B: 73mV C: 43mV D: 28mV E: 21mV F: 37mV G: 28mV H: 22mV I : 23mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 1.5A O/P:FULL LOAD	D:1.1A	P
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 60A O/P:FULL LOAD	D:38A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: -5%~+10% O/P:MIN. LOAD A:3.0V~3.6V B:4.5V~5.7V C:6V~9V D:10V~13.2V E:12V~15V F:13.5V~18V G:20V~26.4V H:26V~32V I:41V~56V	A:2.76V~4.04V B:4.44V~6.25V C:5.92V~9.28V D:9.10V~13.70V E:11.36V~16.12V F:12.81V~17.00V G:20.2V~27.6V H:24.4V~32.6V I :37.5V~59.4V	P
9	SET UP TIME	I/P:230VAC SPEC:800ms O/P:FULL LOAD	D : 580mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	D : 47mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P: FULL LOAD A:69% B:77% C:77% D:79% E:79% F:80% G:80% H:81% I :81%	A: 71.91% B: 77.64% C: 78.99% D: 79.40% E: 80.22% F: 81.03% G: 83.37% H: 82.70% I : 81.87%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~140% O/P:TESTING	A: 120% B: 120% C: 112.52% D: 128% E: 125% F: 113.96% G: 119.28% H: 128% I : 123.8%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC: 110%~135% O/P: TESTING A:3.8~4.45V B:5.75~6.75V C:9.4V~10.9 D:13.8V~16.2V E:15.5V~18.2V F:18V~21V G:27.6V~32.4V H:33.7V~39.2V I:57.6V~67.2V	A: 4.17V B: 6.30V C: 9.29V D: 15.14V E: 17.31V F: 17.01V G: 28.2V H: 38.0V I : 59.5V	p
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<1mA N-FG--<1mA	D: L-FG:0.75mA N-FG:0.60mA	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100M Ohms MIN. I/P-O/P 500VDC / 100M Ohms MIN. I/P-FG 500VDC / 100M Ohms MIN.	D: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 sec (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 sec (10mA CUT-OFF) O/P - FG : 500VAC/1sec (10mA CUT-OFF)	D: I/P-O/P :4.84mA I/P-FG :3.79mA O/P- FG :8.76mA	P
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:27.2°C BURN-IN DURATION : 2.0 hrs	D: NON BREAK	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																																		
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-9.9°C	D : AFTER 2 hrs POWER ON OK	P																																																		
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:42.8°C	D : AFTER 18 hrs NON BREAK																																																			
		3.ACCELERATED LIFE TEST I/P:264VAC O/P:FULL LOAD POWER ON :10 sec POWER OFF :10 sec AMBIENT TEMPERATURE:25°C AMBIENT HUMIDITY:95%	D : AFTER 13 hrs NON BREAK																																																			
19	TEMPERATURE RISE TEST T rise OF PARTS	D: I/P :230VAC O/P :FULL LOAD AFTER 2.0 hrs BURN-IN TA:27.2°C		P																																																		
		<table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>71.3°C</td> <td>44.1°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>88.3°C</td> <td>61.1°C</td> </tr> <tr> <td></td> <td>T1CORE</td> <td>MAIN TRANSFORMER</td> <td>74.1°C</td> <td>46.9°C</td> </tr> <tr> <td></td> <td>D11</td> <td>O/P DIODE</td> <td>86.3°C</td> <td>59.1°C</td> </tr> <tr> <td></td> <td>C42</td> <td>O/P FILTER CAPACITOR</td> <td>59.6°C</td> <td>32.4°C</td> </tr> <tr> <td></td> <td>L1</td> <td>O/P CHOCK</td> <td>71.9°C</td> <td>44.7°C</td> </tr> <tr> <td></td> <td>T1COIL</td> <td>MAIN TRANSFORMER</td> <td>69.4°C</td> <td>42.2°C</td> </tr> <tr> <td></td> <td>C6</td> <td>I/P FILTER CAPACITOR</td> <td>60.8°C</td> <td>33.6°C</td> </tr> <tr> <td></td> <td>LF1</td> <td>I/P FILTER COIL</td> <td>50.7°C</td> <td>23.5°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	T rise		BD1	BRIDGE DIODE	71.3°C	44.1°C		Q1	MAIN TRANSISTOR	88.3°C	61.1°C		T1CORE	MAIN TRANSFORMER	74.1°C	46.9°C		D11	O/P DIODE	86.3°C	59.1°C		C42	O/P FILTER CAPACITOR	59.6°C	32.4°C		L1	O/P CHOCK	71.9°C	44.7°C		T1COIL	MAIN TRANSFORMER	69.4°C	42.2°C		C6	I/P FILTER CAPACITOR	60.8°C	33.6°C		LF1	I/P FILTER COIL	50.7°C	23.5°C		
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20	LIFE CYCLE	D : SUPPOSE C42 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc42:57.4°C Life:199510 hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc42:69.1°C Life:89301 hrs		P																																																		
21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	D : FUSE :4A/250VAC GFE BRIDGE DIODE :D3SB60 LINE FILTER :TF-485 ET-28H TRANSFOMER :TF-454-1 EER-28L POWER SWITCHER :2SK2850 TO-3P OUTPUT DIODE :S20LC20 OUTPUT CAPACITOR :RUBYCON 2200uF/16V 105°C, LXJ INPUT CAPACITOR :RUBYCON 330uF/250V,CE,85°C P.C.B :LPS-100-R1 ,CEM-3 , 2 OZ SS																																																				
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																																		
19980312	PRODUCTION SAMPLE	PASS	H.C.LIOU	Max Lin																																																		
19981209	9812A03A (5V,27V)	PASS	H.C.LIOU	Max Lin																																																		
19981222	9812B02B (48V)	PASS	H.C.LIOU	Max Lin																																																		
19990111	9901A17A (3.3V)	PASS	H.C.LIOU	Max Lin																																																		
20000930	A0009C03 (3.3V)	PASS	VINCENT	Max Lin																																																		
20001021	A0010B05 (12V,13.5V,27V)	PASS	VINCENT	Max Lin																																																		