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ELECTRONICS

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Jameco Part Number 216751



## Declaration of RoHS Conformity

To minimize the environmental impact and take more responsibility to the earth we live, MEAN WELL hereby confirms that the following product series comply with Directive 2002/95/EC of the European Parliament - RoHS (Restriction of Hazardous Substances).

### Content of Compliance

Lead	<0.1 % by weight (1000 ppm)
Mercury	<0.1 % by weight (1000 ppm)
Cadmium	<0.01 % by weight (100 ppm)
Hexavalent Chrome (Cr <sup>+6</sup> )	<0.1 % by weight (1000 ppm)
PBBs	<0.1 % by weight (1000 ppm)
PBDEs	<0.1 % by weight (1000 ppm)

### Product Series

Please refer to the attached list for details.

### Delivery

**The actual delivery date for RoHS compliance products will depend on our inventory status.**

Please contact our sales representatives for details.

### How to Recognize

The serial number on each PSU originally was Cxxxxxxxx and right now will be changed to Rxxxxxxxx or Exxxxxxxx (or add "R" for serial number that only specify the production weeks) for RoHS compliance products for the ease of identification.

Jerry Lin / President  
MEAN WELL Enterprises Co., Ltd.

<b>Product Family</b>	<b>Series</b>
<b>G3</b>	RS-25/35/50/75/100/150, RD-35/50/65/85/125, RID-50/65/85/125, RT-50/65/85/125, RQ-50/65/85/125
<b>G2</b>	S-25/40/60/100F/150/240, T-40, D/ID/T/IT/Q/IQ-60, D/T/Q-120, SC-150
<b>PFC</b>	SP-75/100/150/200/320/480/500/750, USP-225/350, TP-75/100/150, QP-100/150/200/320/375
<b>AD</b>	ADS-55/155, AD-55/155, ADD-55/155
<b>CL/PL</b>	CLG-60/100, PLN-30/60/100
<b>DIN</b>	MDR-20/40/60, DR-30/45/60/75/100/120, DRH-120, DRP-240/480/480S, DRT-240/480/960, DR-RDN20, DR-UPS40
<b>Modular</b>	MP-450/650/1K0, MS-75/150/300, MD-100
<b>Parallel</b>	PSP-500/600/1000/1500, RSP-1000/1500, RCP-1000, RCP-1U
<b>Open Frame</b>	NFM-05/10/15/20, PM-05/10/15/20, PS/PD-25, PS-35, PS/PD/PT-45, PS/PD/PT-65, RPD/RPT-65, PD-110, PQ-100, PPQ-100, PPS/PPT-125, LPS-50/75/100, LPP-100/150, ASP-150, PPS-200, PID-250, MPS-30, MPS/MPD/MPT-45, RPS/RPD/RPT-60, MPS/MPD/MPT-65, RPS/RPD/RPT-75, MPS/MPD/MPT/MPQ-120, MPS/MPD/MPT/MPQ-200
<b>Charger</b>	GC-30, PA/PB/PS-120, ESC/ESP-120, ESC/ESP-240, PB-300/360
<b>Adaptor</b>	GS-06/15/18/25, ES-18/25, P25, P30, P40, P50, P66, U65S, MES-30/50, ATX-100, AS-120P
<b>PC/IPC Power</b>	YP-350J, IPC-200/250/300
<b>DC/DC Converter</b>	SD-25/50/100/150/200/350, SDM30, ASD10H/15H, NSD10/15, SBT, SFT, DET, SRS, SUS, SPR, SPU, SCW, SLW, SKE SKA, DCW, DLW, DKE, DKA, TKA
<b>Inverter</b>	TN/TS-1500, A301/A302
<b>Power Cord</b>	YP** + YC**

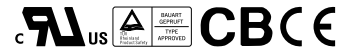
**\*\* For other products not listed above, please contact our sales representatives for availability**

2007.04 update



■ Features :

- Universal AC input/Full range
- Low leakage current<0.5mA
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 65KHz
- 2 years warranty

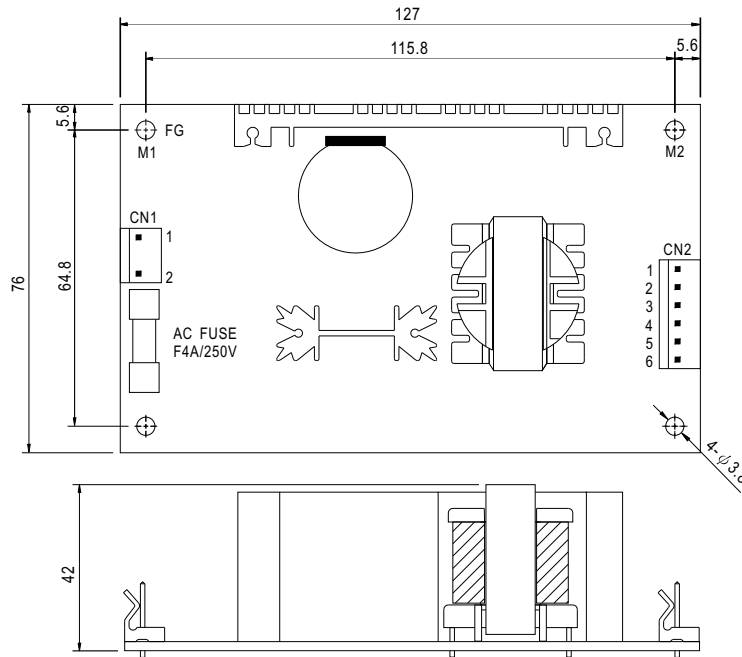


SPECIFICATION

MODEL	PS-65-3.3	PS-65-5	PS-65-7.5	PS-65-12	PS-65-13.5	PS-65-15	PS-65-24	PS-65-27	PS-65-48		
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V	
	RATED CURRENT	12A	12A	8A	5.2A	4.7A	4.2A	2.7A	2.4A	1.35A	
	CURRENT RANGE	0 ~ 15.2A	0 ~ 13.8A	0 ~ 9.6A	0 ~ 6A	0 ~ 5.4A	0 ~ 4.8A	0 ~ 3A	0 ~ 2.7A	0 ~ 1.5A	
	RATED POWER	39.6W	60W	60W	62.4W	63.5W	63W	64.8W	64.8W	64.8W	
	OUTPUT POWER (max.)	Rated output power for convection; 72W (+3.3V : 50W;+5V:69W) with 18 CFM min. Forced air									
	RIPPLE & NOISE (max.) Note.2	80mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.9V	14.25 ~ 16.5V	22.8 ~ 26.4V	25.65 ~ 29.7V	45.6 ~ 52.8V	
	VOLTAGE TOLERANCE Note.3	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LOAD REGULATION	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	
SETUP, RISE TIME	800ms, 20ms at full load										
HOLD UP TIME (Typ.)	60ms at full load										
INPUT	VOLTAGE RANGE	90 ~ 264VAC		127 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 440Hz									
	EFFICIENCY(Typ.)	69%	76%	79%	79%	79%	79%	80%	80%	80%	
	AC CURRENT (Typ.)	1.2A/115VAC		0.72A/230VAC							
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC		40A/230VAC							
LEAKAGE CURRENT	<0.75mA / 240VAC										
PROTECTION	OVERLOAD	73 ~ 105W(3.3V : 51 ~ 75W)(5V : 70 ~ 105W) rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed.									
	OVER VOLTAGE	3.8 ~ 4.46V	5.75 ~ 6.75V	8.63 ~ 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	
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	±0.04%/°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	300.7K hrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	127*76*42mm (L*W*H)									
	PACKING	0.21Kg; 54pcs/14.2Kg/1.35CUFT									
NOTE	<ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>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.</li> <li>Mounting holes M1 and M2 should be grounded for EMI purposes.</li> </ol>										

**Mechanical Specification**

Unit:mm



AC Input Connector (CN1) : Molex 5277-02 or equivalent

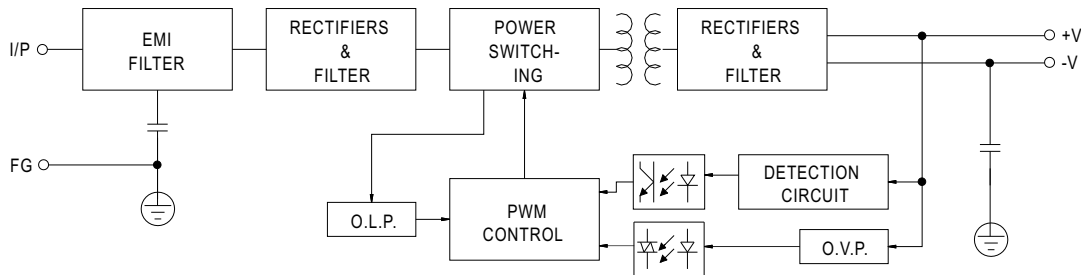
Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	Molex 5195 or equivalent	Molex 5194 or equivalent
2	AC/L	Molex 5195 or equivalent	Molex 5194 or equivalent

DC Output Connector (CN2) : Molex 5273-06 or equivalent

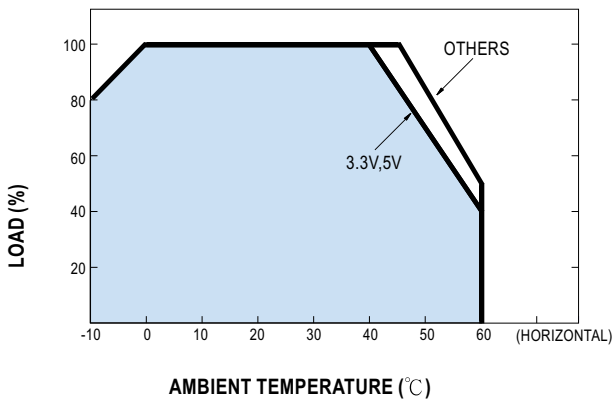
Pin No.	Assignment	Mating Housing	Terminal
1,2,3	+V	Molex 5195 or equivalent	Molex 5194 or equivalent
4,5,6	-V	Molex 5195 or equivalent	Molex 5194 or equivalent

**Block Diagram**

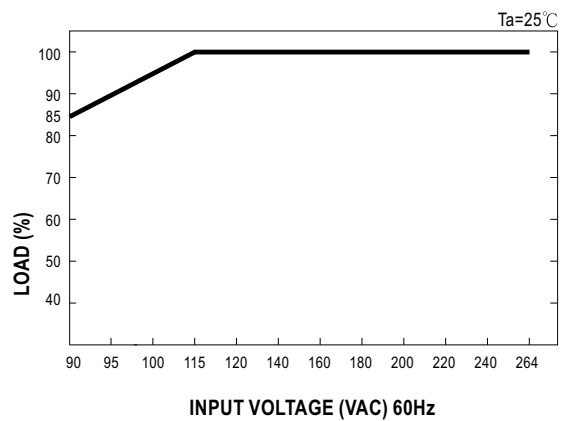
fosc : 65KHz



**Derating Curve**



**Output Derating VS Input Voltage**



# Quality Engineering Test Report

**SERIES: PS-65 60W WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY OPEN FRAME TYPE**

<b>SAMPLE:</b>	A.PS-65-5	5V / 12A	D. PS-65-24	24V / 3A
	B.PS-65-12	12V / 5.2A	E. PS-65-48	48V / 1.5A
	C.PS-65-15	15V / 4.2A		

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:90~264VAC O/P:FULL LOAD	A:65.85VAC~267VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: A: ±1% O/P:FULL LOAD B: ±1% C: ±1% D: ±1% E: ±1%	A: $\frac{-0.12\%}{\%}$ ~ 0% % B: 0% % ~ 0% % C: 0% % ~ 0% % D: 0% % ~ 0% % E: 0% % ~ $\frac{0.01\%}{\%}$	P
3	LOAD REGULATION	I/P:230VAC SPEC: A: ±3% O/P: B: ±2% MIN. TO FULL LOAD C: ±2% D: ±2% E: ±2%	A: -0.24% ~ +0.36% B: -0.05% ~ +0.05% C: 0% % ~ 0.04% D: -0.02% ~ 0% % E: $\frac{-0.01\%}{\%}$ ~ +0.01%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: A: ±3% O/P: B: ±2% MIN. TO FULL LOAD C: ±2% D: ±2% E: ±2%	A: -0.5% ~ +0.24% B: 0% ~ +0.1% C: 0% ~ +0.04% D: -0.02% ~ +0.02% E: 0% ~ +0.03%	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: A:100mV O/P: FULL LOAD B:100mV C:100mV D:100mV E:100mV	A: <u>66mV</u> B: <u>77mV</u> C: <u>21mV</u> D: <u>28mV</u> E: <u>43mV</u>	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 0.9A O/P:FULL LOAD	A: <u>0.7A</u>	P
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 40A O/P:FULL LOAD	A: <u>32.39A</u>	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC:-5%~+10% O/P:MIN. LOAD A:4.75V~5.5V B:11.4V~13.2V C:14.25V~16.5V D:22.8V~26.4V E:45.6V~52.8V	A:4.28V~6.18V B:9.33V~13.73V C:12.62V~18.85V D:17.23V~27.6V E:38.8V~53.6V	P
9	SET UP TIME	I/P:230VAC SPEC:800ms O/P:FULL LOAD	A: <u>552.86mS</u>	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A: <u>93.66mS</u>	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
11	EFFICIENCY	I/P:230VAC O/P: FULL LOAD SPEC: A:76% B:79% C:79% D:80% E:80%	A: <u>76.5%</u> B: <u>80.24%</u> C: <u>81.83%</u> D: <u>83.25%</u> E: <u>83.95%</u>	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P: TESTING SPEC: A: 73~105W B: 73~105W C: 73~105W D: 73~105W E: 73~105W	A: <u>78.84W</u> B: <u>83.56W</u> C: <u>78.74W</u> D: <u>93.44W</u> E: <u>97.67W</u>	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:TESTING SPEC:115%~135% A : 5.5V~6.75V B : 13.2V~16.2V C : 16.5V~20.25V D : 26.4V~32.4V E : 52.8V~64.8V	A: <u>6.20V</u> B: <u>14.08V</u> C: <u>19.03V</u> D: <u>28.3V</u> E: <u>53.7V</u>	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<0.5mA N-FG--<0.5mA	B: L-FG: <u>0.4 mA</u> N-FG: <u>0.4mA</u>	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC/50MOhms MIN. I/P-O/P 500VDC/50MOhms MIN. I/P-FG 500VDC/50MOhms MIN.	A: O/P-FG > <u>50MOhms</u> I/P-O/P > <u>50MOhms</u> I/P-FG > <u>50MOhms</u>	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)	A: I/P-O/P : <u>3.38mA</u> I/P-FG : <u>3.52mA</u> O/P- FG : <u>1.93mA</u>	P
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:25.4°C BURN-IN DURATION : 1.33 hrs	A: NON BREAK	P
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:80 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-8.5°C	AFTER <u>2</u> hrs POWER ON <u>OK</u>	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE: <u>45.1</u> °C	AFTER <u>14</u> hrs NON BREAK	
		3.ACCELERATED LIFE TEST I/P:267VAC O/P:FULL LOAD POWER ON : <u>3</u> min POWER OFF : <u>5</u> sec AMBIENT TEMPERATURE: <u>85</u> °C AMBIENT HUMIDITY: <u>95</u> %	AFTER <u>3.5</u> hrs NON BREAK	

