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ELECTRONICS

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Jameco Part Number 212312



## 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

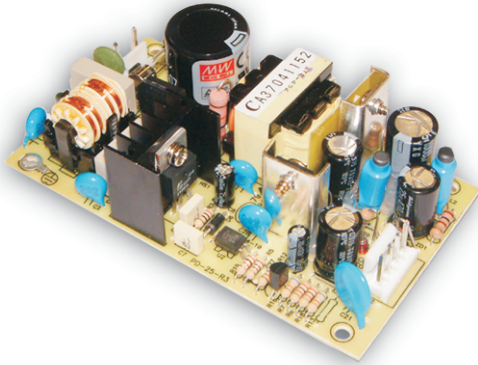
The serial number on each PSU originally was Cxxxxxxxx and right now will be changed to Rxxxxxxxx or Exxxxxxxx (or add "R" for serial number that only specify the production weeks) for RoHS compliance products for the ease of identification.

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**

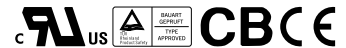
**\*\* For other products not listed above, please contact our sales representatives for availability**

2007.04 update



■ Features :

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

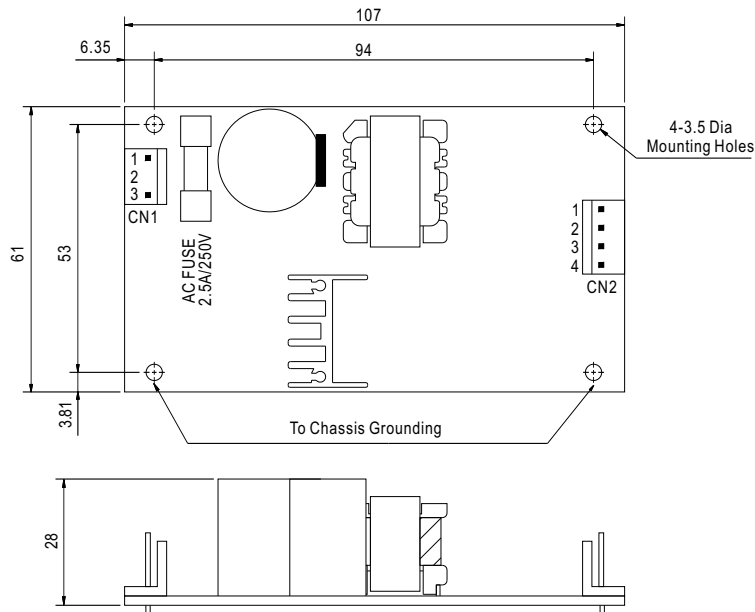


## SPECIFICATION

MODEL	PD-25A		PD-25B		PD-2505		PD-2512		PD-2515		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2	CH1	CH2	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V	5V	-5V	12V	-12V	15V	-15V
	RATED CURRENT	2.1A	1.2A	1.2A	0.8A	2.5A	2.5A	1A	1A	0.8A	0.8A
	CURRENT RANGE	0.2 ~ 2.5A	0.1 ~ 1.5A	0.2 ~ 2A	0.1 ~ 1A	0.1 ~ 3A	0.1 ~ 2.5A	0.1 ~ 1.2A	0.1 ~ 1.2A	0.1 ~ 1A	0.1 ~ 1A
	RATED POWER	25W		25.2W		25W		24W		24W	
	RIPPLE & NOISE (max.) Note.2	50mVp-p	150mVp-p	50mVp-p	200mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p	50mVp-p
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±6.0%	±6.0%	±6.0%	±4.0%	±4.0%	±4.0%	±4.0%
	LINE REGULATION	±0.5%	±2.0%	±0.5%	±2.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±4.0%	±1.0%	±4.0%	±4.0%	±4.0%	±3.0%	±3.0%	±3.0%	±3.0%
	SETUP, RISE TIME	250ms, 50ms/230VAC		250ms, 30ms/115VAC at full load							
HOLD UP TIME (Typ.)	100ms/230VAC		16ms/115VAC at full load								
INPUT	VOLTAGE RANGE	85 ~ 264VAC		120 ~ 370VDC							
	FREQUENCY RANGE	47 ~ 63Hz									
	EFFICIENCY(Typ.)	71%		77%		73%		74%		75%	
	AC CURRENT (Typ.)	0.65A/115VAC		0.4A/230VAC							
	INRUSH CURRENT (Typ.)	COLD START 32A									
	LEAKAGE CURRENT	<0.5mA / 240VAC									
PROTECTION	OVERLOAD	Above 105% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed									
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	5.75 ~ 6.75V	27.6 ~ 32.4V	5.75 ~ 6.75V	-5.75 ~ -6.75V	13.8 ~ 16.2V	-13.8 ~ -16.2V	17.3 ~ 20.3V	-17.3 ~ -20.3V
	OVER TEMPERATURE	Tj 135°C typically (U1) detect on main control IC Protection type : Shut down o/p voltage, recovers automatically after temperature goes down									
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	±0.03%/°C (0 ~ 50°C) ON CH1 output									
	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, light industry level, criteria A									
OTHERS	MTBF	507.9Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	107*61*28mm (L*W*H)									
	PACKING	0.15Kg; 96pcs/15.9Kg/1.3CUFT									
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. 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.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>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.</p>										

■ Mechanical Specification

Unit:mm



AC Input Connector (CN1) : Molex 41791-03 or equivalent

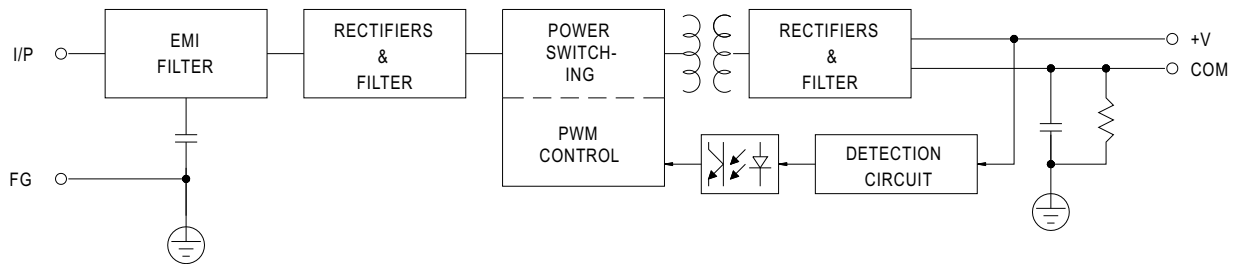
Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	Molex 2139 or equivalent	Molex 2478 or equivalent
2	No Pin		
3	AC/N		

DC Output Connector (CN2) : Molex 41791-04 or equivalent

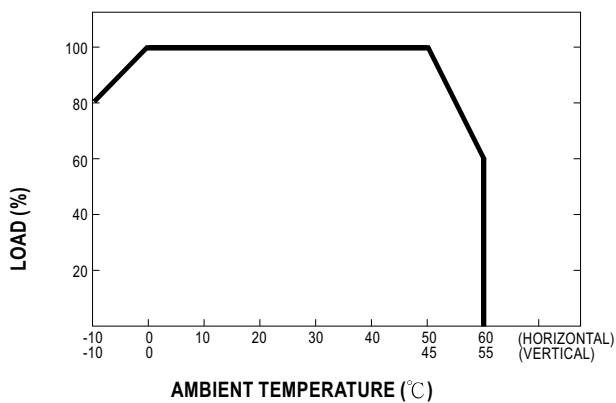
Pin No.	Assignment	Mating Housing	Terminal
1	V1	Molex 2139 or equivalent	Molex 2478 or equivalent
2,3	COM		
4	V2		

■ Block Diagram

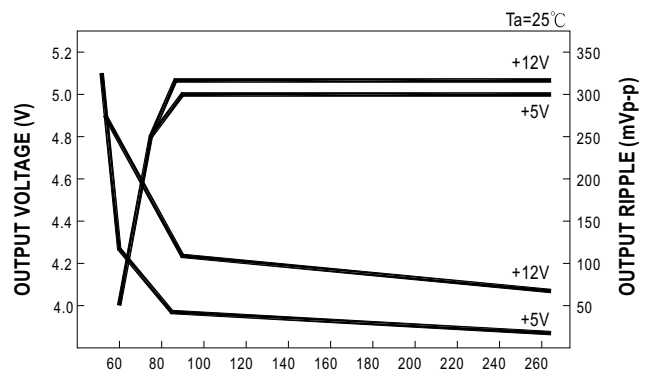
fosc : 100KHz



■ Derating Curve



■ Static Characteristics (A)





NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
6	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD SPEC:0.4A	F:0.312A	P
7	MAX. INRUSH CURREN	I/P:230VAC O/P: FULL LOAD SPEC:40A	F:33.273A	P
8	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:250ms	F:132mS	P
9	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:50mS	F:129mS	P
10	EFFICIENCY	I/P:230VAC O/P:FULL LOAD SPEC: A:71% B:77% C:73% D:74% E:75% F:72%	A:72.12% B:78.66% C:74.84% D:75.77% E:76.60% F:73.18%	P
11	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:ABOVE 105%	A:246% B:269% C:239% D:286.5% E:285% F:230%	P
12	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:FULL LOAD SPEC: V1:115%~135% V2:115%~135%	A : V1: 123% V2: 128% B : V1: 124% V2: 123% C : V1: 124.4% V2: 126% D : V1: 121% V2: 129% E : V1: 124.3% V2: 130.7% F : V1: 124% V2: 130%	P
13	OVER TEMPERATURE PROTECTION & FAN ON/OFF TEST	I/P:230VAC O/P:FULL LOAD SPEC: U1 Tj 135°C TYPICALLY POWER SHUTDOWN	A: OTP:115°C	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<0.5mA N-FG--<0.5mA	A: L-FG:0.25mA N-FG:0.24mA	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.	A: 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/ 1 sec (10mA CUT-OFF)	A: I/P-O/P :1.8mA I/P-FG :2.8mA	P
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:23.6°C BURN-IN DURATION : 1 hrs	NON BREAK	P

18	ENVIRONMENT TEST ( SAMPLE A:)	1.LOW TEMPERATURE TEST I/P:80 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-8.7°C	AFTER 1.33 hrs POWER ON OK	P																																
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:51.2°C	AFTER 14 hrs NON BREAK																																	
		3.ACCELERATED LIFE TEST I/P:267VAC O/P:FULL LOAD POWER ON :3 min POWER OFF :5 sec AMBIENT TEMPERATURE:85°C AMBIENT HUMIDITY:95%	AFTER 4.5 hrs NON BREAK																																	
19	TEMPERATURE RISE TEST T rise OF PARTS	<p style="text-align: center;">A: I/P :230VAC O/P :FULL LOAD AFTER 1 hr BURN-IN TA:23.6°C</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td>BD1</td> <td>BRIDGE DIODE</td> <td>49.0°C</td> <td>25.4°C</td> </tr> <tr> <td>U1</td> <td>MAIN TRANSISTOR</td> <td>55.2°C</td> <td>31.6°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>61.9°C</td> <td>38.3°C</td> </tr> <tr> <td>D7</td> <td>O/P DIODE</td> <td>63.8°C</td> <td>40.2°C</td> </tr> <tr> <td>C14</td> <td>O/P FILTER CAPACITOR</td> <td>43.4°C</td> <td>19.8°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>36.1°C</td> <td>12.5°C</td> </tr> <tr> <td>D5</td> <td>CLAMP DIODE</td> <td>52.4°C</td> <td>28.8°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	T rise	BD1	BRIDGE DIODE	49.0°C	25.4°C	U1	MAIN TRANSISTOR	55.2°C	31.6°C	T1	MAIN TRANSFORMER	61.9°C	38.3°C	D7	O/P DIODE	63.8°C	40.2°C	C14	O/P FILTER CAPACITOR	43.4°C	19.8°C	C5	I/P FILTER CAPACITOR	36.1°C	12.5°C	D5	CLAMP DIODE	52.4°C	28.8°C	P
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20	LIFE CYCLE	A: SUPPOSE C14 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:23.6°C Tc14:43.4°C Life: 424924 hrs I/P:230VAC O/P:FULL LOAD Ta:51.2°C Tc14:65.4°C Life: 92479 hrs		P																																
21	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	A: FUSE : T2.5AL/250VAC UL BRIDGE DIODE : KBP208G 2A/800V GLASS LINE FILTER : LF TF-416 ET-20V TRANSFOMER : MT TF-426 EI-28 POWER SWITCHER : PHIL TOP-223Y OUTPUT DIODE : C82-004 TO-220 OUTPUT CAPACITOR : 1000uF/25V ,LL 105°C, 5Khrs INPUT CAPACITOR : HITACHI 82uF/400V,85°C HP3 P.C.B : PD-25-R1,CEM-3 2 OZ SS																																		
<b>DATE</b>	<b>SAMPLE</b>	<b>TEST RESULT</b>	<b>TEST</b>	<b>APPROVAL</b>																																
980417	PD-25	PASS	H.C.LIOU	Max Lin																																
980930	PD-2503	PASS	H.C.LIOU	Max Lin																																