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Jameco Part Number 215707



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 ⁺⁶)	<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

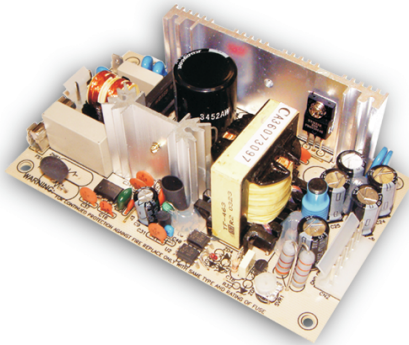
The serial number on each PSU originally was Cxxxxxxxx and right now will be changed to Rxxxxxxxx or Exxxxxxxx (or add "R" for serial number that only specify the production weeks) for RoHS compliance products for the ease of identification.

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

Product Family	Series
G3	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
G2	S-25/40/60/100F/150/240, T-40, D/ID/T/IT/Q/IQ-60, D/T/Q-120, SC-150
PFC	SP-75/100/150/200/320/480/500/750, USP-225/350, TP-75/100/150, QP-100/150/200/320/375
AD	ADS-55/155, AD-55/155, ADD-55/155
CL/PL	CLG-60/100, PLN-30/60/100
DIN	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
Modular	MP-450/650/1K0, MS-75/150/300, MD-100
Parallel	PSP-500/600/1000/1500, RSP-1000/1500, RCP-1000, RCP-1U
Open Frame	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
Charger	GC-30, PA/PB/PS-120, ESC/ESP-120, ESC/ESP-240, PB-300/360
Adaptor	GS-06/15/18/25, ES-18/25, P25, P30, P40, P50, P66, U65S, MES-30/50, ATX-100, AS-120P
PC/IPC Power	YP-350J, IPC-200/250/300
DC/DC Converter	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
Inverter	TN/TS-1500, A301/A302
Power Cord	YP** + YC**

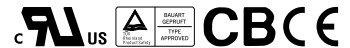
**** For other products not listed above, please contact our sales representatives for availability**

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

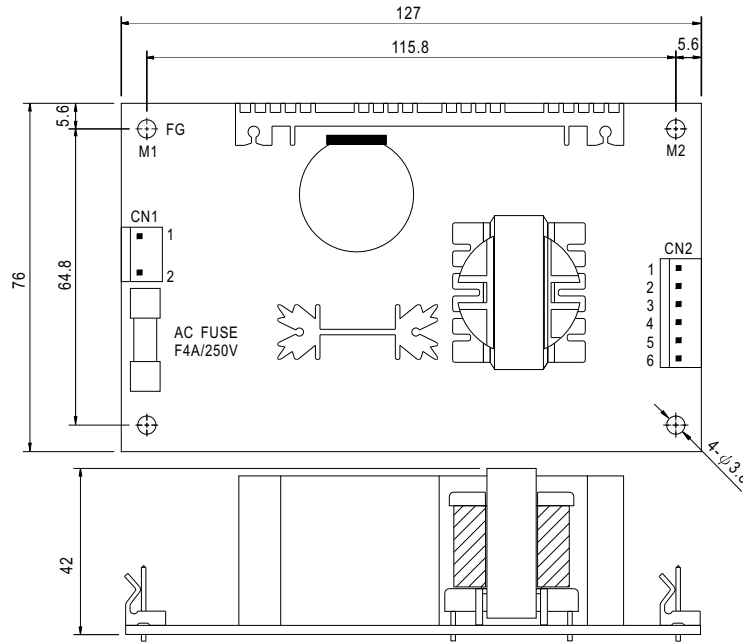


SPECIFICATION

MODEL		PT-65A			PT-65B			PT-65C			PT-65D		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V
	RATED CURRENT	5.5A	2.5A	0.5A	5.5A	2.5A	0.5A	5.5A	2A	0.5A	4A	2A	1A
	CURRENT RANGE	0.4 ~ 7A	0.2 ~ 3.2A	0 ~ 0.7A	0.4 ~ 7A	0.2 ~ 3.2A	0 ~ 0.7A	0.4 ~ 7A	0.2 ~ 2.6A	0 ~ 0.7A	0.5 ~ 5A	0.2 ~ 4A	0.2 ~ 1.3A
	RATED POWER	60W			63.5W			65W			68W		
	OUTPUT POWER (max.)	Rated output power for convection; 72W with 18CFM min. Forced air											
	RIPPLE & NOISE (max.) Note.2	50mVp-p	120mVp-p	50mVp-p	50mVp-p	120mVp-p	100mVp-p	50mVp-p	120mVp-p	100mVp-p	50mVp-p	100mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V											
	VOLTAGE TOLERANCE Note.3	±4.0%	±7.0%	±5.0%	±4.0%	±7.0%	±5.0%	±4.0%	±7.0%	±5.0%	±4.0%	±6.0%	±6.0%
	LINE REGULATION	±1.0%	±2.0%	±1.0%	±1.0%	±2.0%	±1.0%	±1.0%	±2.0%	±1.0%	±1.0%	±2.0%	±3.0%
	LOAD REGULATION	±3.0%	±4.0%	±1.0%	±3.0%	±4.0%	±1.0%	±3.0%	±4.0%	±1.0%	±2.0%	±5.0%	±5.0%
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.)	76%			77%			77%			79%		
	AC CURRENT (Typ.)	1.5A/115VAC			0.9A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC			40A/230VAC								
	LEAKAGE CURRENT	<0.75mA											
PROTECTION	OVERLOAD	73 ~ 95W rated output power									74.8 ~ 98.6W rated output power		
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.											
	OVER VOLTAGE	5.75 ~ 6.75VDC on CH1											
		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	±0.04%/°C (0 ~ 50°C) on +5V 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 1min.											
	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	277.2K hrs min. MIL-HDBK-217F (25°C)											
	DIMENSION	127*76*42mm (L*W*H)											
	PACKING	0.25Kg; 54pcs/15.9Kg/1.35CUFT											
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. Mounting holes M1 and M2 should be grounded for EMI purposes. 												

Mechanical Specification

Unit:mm



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

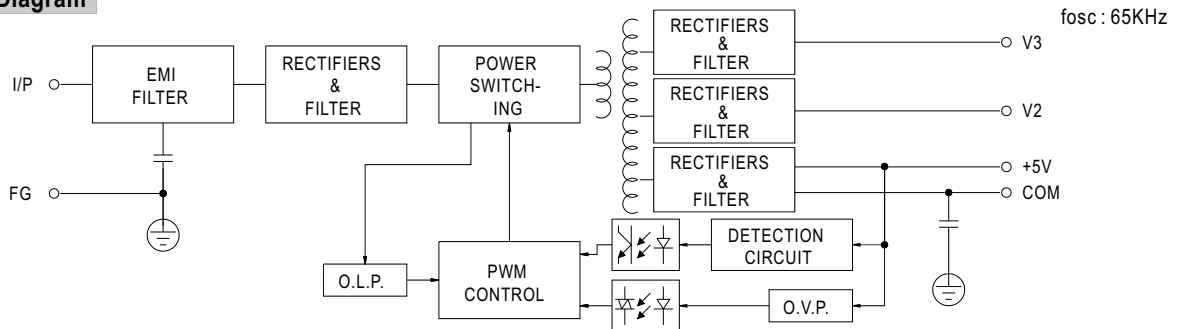
Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	Molex 5195 or equivalent	Molex 5194 or equivalent
2	AC/L		

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

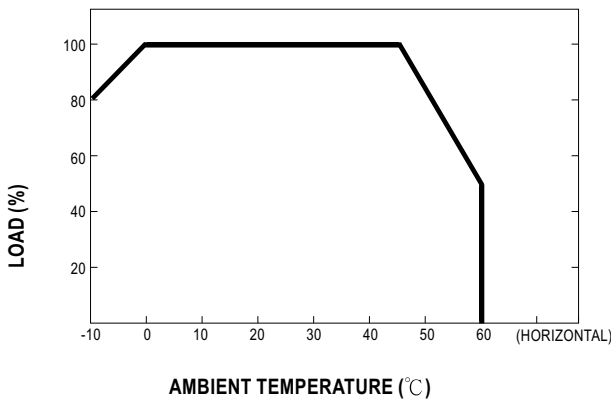
Pin No.	Assignment	Mating Housing	Terminal
1	V2	Molex 5195 or equivalent	Molex 5194 or equivalent
2,3	+5V		
4,5	COM		
6	V3		

※PIN2:+5V PIN3,4,5:COM only for PT-65D

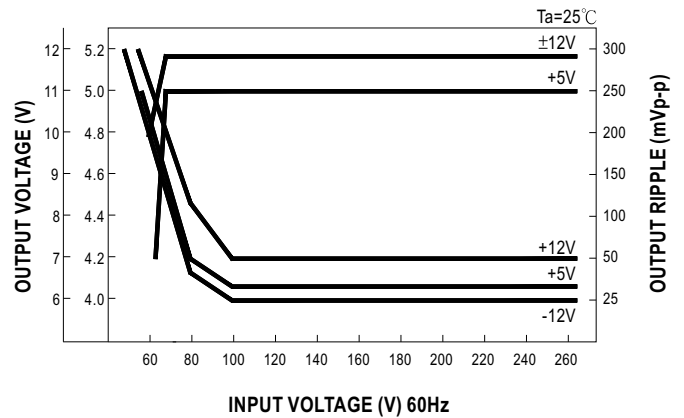
Block Diagram



Derating Curve



Static Characteristics (B)



Quality Engineering Test Report

SERIES: 65W TRIPLE OUTPUT OPEN FRAME SWITCHING POWER SUPPLY

SAMPLE:

A.PT-65A

**V1:+5V / 5.5A
V2:+12V/ 2.5A
V3:- 5V / 0.5A**

C.PT-65C

**V1:+5V / 5.5A
V2:+15V / 2A
V3:- 15V / 0.5A**

B.PT-65B

**V1:+5V / 5.5A
V2:+12V / 2.5A
V3:- 12V / 0.5A**

D.PT-65D

**V1:+5V / 4A
V2:+12V / 2A
V3:+24V / 1A**

NO	TEST ITEM	TEST CONDITION/SPECIFICATION		RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING O/P:FULL LOAD	SPEC:90~264VAC	65VAC~267VAC	P
2	LINE REGULATION	I/P:90~264VAC O/P:FULL LOAD	SPEC: A: V1:±1% V2:±2% V3:±1% B: V1:±1% V2:±2% V3:±1% C: V1:±1% V2:±2% V3:±1% D: V1:±1% V2:±2% V3:±3%	A: V1: -0.5% ~ 0% V2: -0.05% ~ +1.4% V3: 0% ~ 0% B: V1: -0.24% ~ +0.12% V2: -0.05% ~ +0.82% V3: -0.04% ~ 0% C: V1: -0.36% ~ 0% V2: -0.04% ~ +0.91% V3: 0% ~ 0% D: V1: 0% ~ 0% V2: -0.097% ~ +1.7% V3: +0.07% ~ +1.7%	P
3	LOAD REGULATION	I/P:230VAC O/P: MIN. TO MAX.LOAD	SPEC: A: V1:±3% V2:±4% V3:±1% B: V1:±3% V2:±4% V3:±1% C: V1:±3% V2:±4% V3:±1% D: V1:±2% V2:±5% V3:±5%	A: V1: -0.5% ~ +0.5% V2: -0.98% ~ 1.09% V3: -0.12% ~ 0% B: V1: -0.74% ~ +0.62% V2: -0.78% ~ +0.72% V3: -0.05% ~ 0% C: V1: -0.62% ~ +0.74% V2: -1.2% ~ +0.96% V3: -0.04% ~ 0% D: V1: -1.6% ~ 1.1% V2: -0.2% ~ 0.6% V3: -1.3% ~ +1.4%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:90~264VAC O/P:MIN.TO MAX	SPEC: A: V1:±4% V2:±7% V3:±5% B: V1:±4% V2:±7% V3:±5% C: V1:±4% V2:±7% V3:±5% D: V1:±4% V2:±6% V3:±6%	A: V1: -1.36% ~ +1.12% V2: -1.25% ~ +4.84% V3: 0% ~ +0.74% B: V1: -1.38% ~ +1.0% V2: -1.2% ~ +4.1% V3: 0% ~ +1.4% C: V1: -1% ~ +1.12% V2: -1.96% ~ +3.08% V3: -0.58% ~ 0% D: V1: -1.6% ~ +1.9% V2: 6.9% ~ -4.49% V3: -3.5% ~ +7%	P

NO	TEST ITEM	TEST CONDITION/SPECIFICATION	RESULT	VERDICT
5	RIPPLE & NOISE	I/P:230VAC O/P: FULL LOAD SPEC: A: V1: 50mV V2:120mV V3: 50mV B: V1:50mV V2:120mV V3:100mV C: V1:50mV V2:120mV V3:100mV D: V1:50mV V2:100mV V3:200mV	A: V1: <u>12mV</u> V2: <u>30mV</u> V3: <u>11mV</u> B: V1: <u>13mV</u> V2: <u>90mV</u> V3: <u>15mV</u> C: V1: <u>10mV</u> V2: <u>94mV</u> V3: <u>12mV</u> D: V1: <u>15mV</u> V2: <u>61mV</u> V3: <u>50mV</u>	P
6	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD SPEC:0.9A	A: <u>0.71A</u>	P
7	MAX. INRUSH CURREN	I/P:230VAC O/P: FULL LOAD COLD START SPEC:40A	A: <u>27.05A</u>	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC: (-5%~+10%) A: 4.75V~5.5V B: 4.75V~5.5V C: 4.75V~5.5V D: 4.75V~5.5V	A: <u>4.22V~6.14V</u> B: <u>4.26V~6.26V</u> C: <u>4.26V~6.16V</u> D: <u>4.45V~5.8V</u>	P
9	SET UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD SPEC:800mS	A: <u>558mS</u>	P
10	HOLD UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD SPEC:20mS MIN.	A: <u>92mS</u>	P
11	EFFICIENCY	I/P:230VAC SPEC: A:76% B:77% C:77% D:79%	A: <u>76.68%</u> B: <u>77.91%</u> C: <u>78.21%</u> D: <u>79.16%</u>	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:73W~95W	A: <u>85W</u> B: <u>88W</u> C: <u>87W</u> D: <u>85W</u>	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:FULL LOAD SPEC:5.5V~6.5VDC ON V1	A: <u>6.15V</u> B: <u>6.27V</u> C: <u>6.35V</u> D: <u>5.88V</u>	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG----<0.5mA N-FG----<0.5mA	A: L-FG: <u>0.41mA</u> N-FG: <u>0.4mA</u>	P
15	INSULATION RESISTANCE	SPEC: O/P-FG :500VDC/100MΩ MIN. I/P-O/P :500VDC/100MΩ MIN. I/P-FG : 500VDC/100MΩ MIN.	A: O/P-FG: >100MΩ I/P-O/P: >100MΩ I/P-FG : >100MΩ	P
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 MIN (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 MIN (10mA CUT-OFF) O/P -FG : 500VAC/1MIN (10mA CUT-OFF)	A: NO BREAK I/P-O/P : <u>5.14mA</u> I/P-FG : <u>4.73mA</u> O/P-FG : <u>2.16mA</u>	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
17	BURNIN TEST	I/P: 230VAC O/P:FULL LOAD TA:23.1°C BURN-IN DURATION:2.5hrs	NO BREAK	P
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:82VAC O/P:80% LOAD AMBIENT TEMPERATURE:-9.4°C	A: AFTER 3 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:48.4°C	A: AFTER 15 hrs NON BREAK	
		3.ACCELERATED LIFE TEST I/P:267 VAC O/P:FULL LOAD POWER ON :3 min POWER OFF :5 sec AMBIENT TEMPERATURE:85 °C AMBIENT HUMIDITY:95%	A: AFTER 9 hrs NON BREAK	

19	TEMPERATURE RISE ΔT OF PARTS	A: I/P :230VAC AFTER 2.5hrs BURN-IN O/P :FULL LOAD TA:23.1°C		P		
		POSITION	P/N		TEMP	ΔT
		BD1	BRIDGE DIODE		54.9°C	31.8°C
		Q1	MAIN TRANSISTER		68.9°C	45.8°C
		T1	MAIN TRANSFORMER		77.5°C	54.4°C
		D4	O/P DIODE		84.1°C	61°C
		C22	O/P FILTER CAPACITOR		67.5°C	44.4°C
		D5	O/P DIODE		82°C	58.9°C
		RG1	7905		72.9°C	49.8°C
		D1	CLAMPING DIODE		78.5°C	55.4°C
		C5	I/P FILTER CAPACITOR		46.7°C	23.6°C
FL1	LINE FILTER	45.2°C	22.1°C			

20	LIFE CYCLE	SUPPOSE C22 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULLLOAD Ta:25°C Tc22:69.4°C Life time:61897hrs I/P:230VAC O/P:FULLLOAD Ta:45°C Tc22:84.1°C Life time:22349hrs		P
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21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	FUSE :F4A/250VAC UL BRIDGE DIODE :LT KB406G LINE FILTER :LS TF-484-R1 ET-20V TRANSFOMER :LS TF-443-R1 ETD-34 POWER SWITCHER :K2545 6A/600V TO-220F OUTPUT DIODE :SF10SC4 10A/40V TO-220F OUTPUT CAPACITOR :ELNA 3300uF/10V 105°C RJH INPUT CAPACITOR :HITACHI 150uF/400V,85°C P.C.B :PT-65-R2,CEM-1 2 OZ SS		
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DATE	SAMPLE	TEST RESULT	TEST	APPROVL
980611	PT-65A	PASS	劉鴻慶	MAX LIN
20020910	PRODUCT SAMPLE 9912A20 PT-65D	PASS	VINCENT	MAX LIN