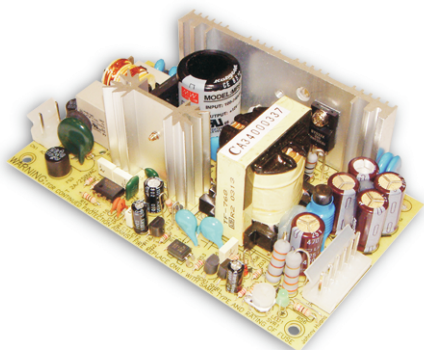




■ Features :

- Universal AC input / Full range
- Low leakage current $\leq 0.3\text{mA}$
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 45KHz
- 3 years warranty

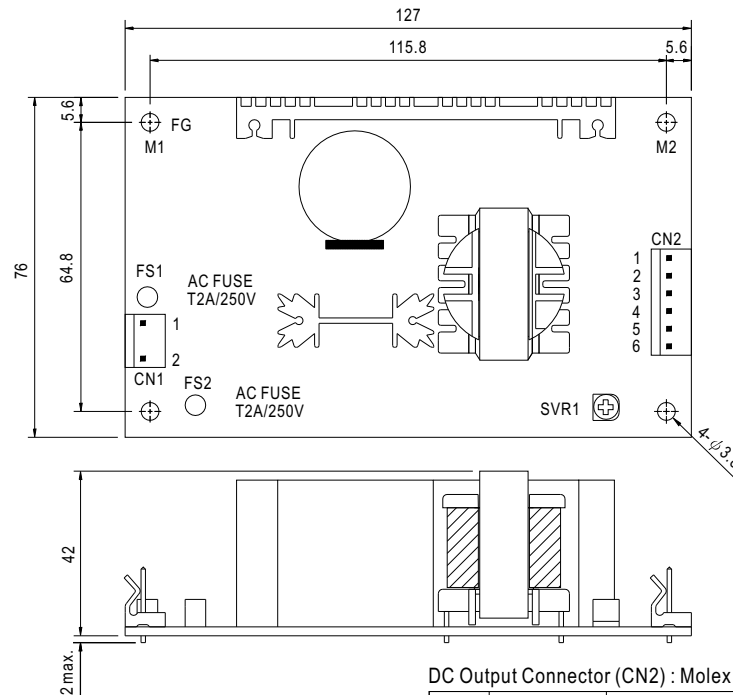


SPECIFICATION

MODEL		MPD-65A		MPD-65B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	5.5A	2.8A	3.5A	2A
	CURRENT RANGE	0.4 ~ 7A	0.2 ~ 3.2A	0.4 ~ 6A	0.2 ~ 2.6A
	RATED POWER	61.1W		65.5W	
	OUTPUT POWER (max.)	72W with 18CFM min. Forced air convection			
	RIPPLE & NOISE (max.) Note.2	60mVp-p	150mVp-p	60mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.5 ~ 5.5V		CH1:4.5 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±4.0%	±7.0%	±4.0%	±7.0%
	LINE REGULATION	±1.0%	±2.0%	±1.0%	±2.0%
	LOAD REGULATION	±3.0%	±4.0%	±3.0%	±4.0%
	SETUP, RISE TIME	800ms, 20ms/230VAC 800ms, 20ms/115VAC at full load			
	HOLD UP TIME (Typ.)	80ms/230VAC 12ms/115VAC at full load			
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 440Hz			
	EFFICIENCY(Typ.)	75%		78%	
	AC CURRENT (Typ.)	1.6A/115VAC 1A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<0.3mA / 264VAC			
PROTECTION	OVERLOAD	73 ~ 105W 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 ~ +55℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.04%/℃ (0 ~ 50℃) on +5V output			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL2601-1, TUV EN60601-1, IEC60601-1 approved			
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Compliance to EN55011 (CISPR11) Class B			
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3			
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN60601-1-2, medical level, criteria A			
OTHERS	MTBF	291.3Khrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	127*76*42mm (L*W*H)			
	PACKING	0.25Kg; 54pcs/16Kg/1.35CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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

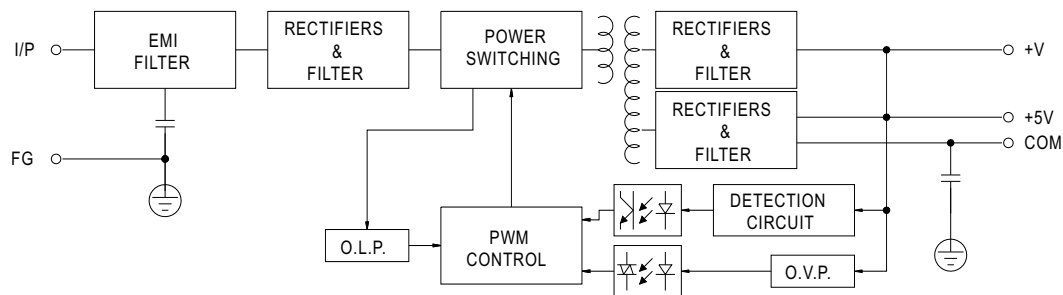
Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	Molex 5195 or equivalent	Molex 5194 or equivalent
2	AC/L		

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

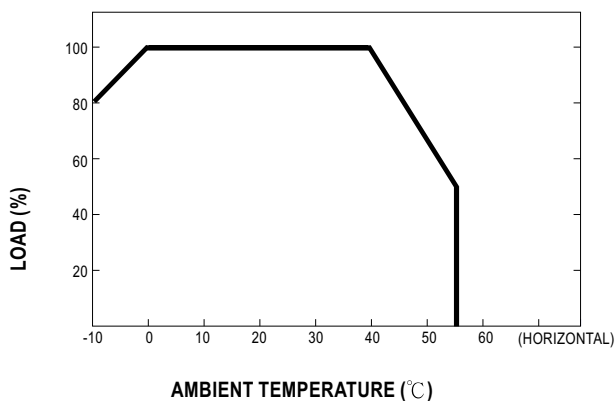
Pin No.	Assignment	Mating Housing	Terminal
1	+V	Molex 5195 or equivalent	Molex 5194 or equivalent
2,3	+5V		
4,5	COM		
6	NC		

Block Diagram

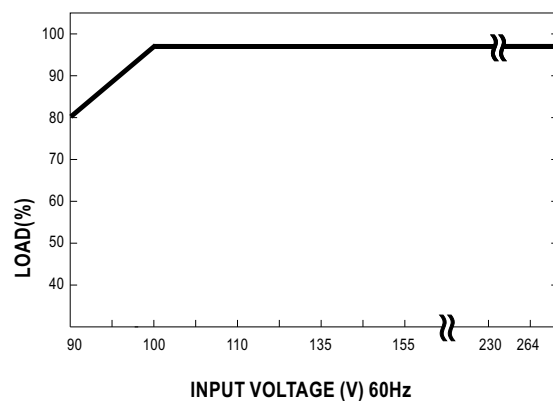
fosc : 45KHz



Derating Curve



Static Characteristics



Quality Engineering Test Report

SERIES: MPD-65 65W AC-DC DUAL OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.MPD-65A V1: 5V/5.5A V2: 12V/2.8A B.MPD-65B V1: 5V/3.5A V2: 24V/2A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	MAX. INRUSH CURREN	I/P:230VAC SPEC:40A O/P: FULL LOAD	A: 31.507A B: 29.53A	P
2	SET UP TIME	I/P:230VAC SPEC:800mS O/P:FULL LOAD	A: 2278.69mS B: 274.45mS	P
3	RISE TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A: 8.054 mS B: 15.07 mS	P
4	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A: 97.45mS B: 91.14mS	P
5	LINE REGULATION	I/P:90~264VAC SPEC: O/P:FULL LOAD A: V1: $\pm 1\%$ V2: $\pm 2\%$ B: V1: $\pm 1\%$ V2: $\pm 2\%$	A. V1: -0.5% ~ +0.12% V2: -0.098% ~ +1.43% B. V1: -0.238% ~ +0.00% V2: -0.237% ~ +0.118%	P
6	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A: V1: $\pm 3\%$ V2: $\pm 4\%$ B: V1: $\pm 3\%$ V2: $\pm 4\%$	A. V1: -1.0% ~ +0.39% V2: -1.13% ~ +0.925% B. V1: -0.237% ~ +0.11% V2: -0.315% ~ +0.55%	P
7	OUTPUT VOLTAGE TOLERANCE	I/P:90~264VAC SPEC: O/P:0% TO FULL LOAD A: V1: $\pm 4\%$ V2: $\pm 7\%$ B: V1: $\pm 4\%$ V2: $\pm 7\%$	A. V1: -1.868% ~ +0.377% V2: -0.684% ~ +5.01% B. V1: -1.98% ~ +1.22% V2: -3.321% ~ +5.95%	P
8	OVER LOAD PROTECTION	I/P:230VAC SPEC: 73W~105W O/P:TESTING	A: 102.36W B: 82.22W	P
9	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:90~264VAC O/P:FULL LOAD	A. 54.688V ~ 264 VAC B. 58.81V ~ 264 VAC	P
10	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A: V1: 60 mVp-p V2: 150 mVp-p B: V1: 60 mVp-p V2: 150 mVp-p	A: V1: 5 mVp-p V2: 39 mVp-p B: V1: 5 mVp-p V2: 44 mVp-p	P
11	AC INPUT CURRENT	I/P:230VAC SPEC:1A O/P:FULL LOAD	A: 0.757 A B: 0.759 A	P
12	EFFICIENCY	I/P:230VAC SPEC: A:75% O/P:FULL LOAD B:78%	A: 77.202 % B: 79.733 %	P
13	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A:4.75~5.25V O/P:MIN. LOAD B:4.75~5.25V	A. 4.1 V ~ 5.656 V B. 4.2 V ~ 5.7 V	P
14	GROUND LEAKAGE CURRENT	I/P:264VAC SPEC: L-FG--<0.3mA N-FG--<0.3mA	A: L-FG: 0.261mA N-FG: 0.264mA B: L-FG: 0.247mA N-FG: 0.251mA	P
15	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 4KVAC/ 1 min. (10mA CUT-OFF) I/P - FG: 1.5KVAC/ 1 min. (10mA CUT-OFF) O/P -FG: 0.5KVAC/ 1 min. (10mA CUT-OFF)	A: I/P-O/P: 2.337mA I/P-FG: 1.516mA O/P-FG: 3.72mA B: I/P-O/P: 2.1mA I/P-FG: 1.3mA O/P-FG: 3.6mA	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																
16	INSULATION RESISTANCE	SPEC: I/P-O/P: 500VDC/100MOhms MIN. I/P-FG: 500VDC/100MOhms MIN. O/P-FG: 500VDC/100MOhms MIN.	A: TEST OK B: TEST OK	P																																
17	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:25.7°C BURN-IN DURATION : 2.5 hrs	B:NON BREAK	P																																
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-10.1°C	AFTER 1hrs POWER ON OK	P																																
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:40.9°C	AFTER 3 hrs NON BREAK																																	
		3.High Humidity High Voltage On/Off Test I/P:267VAC O/P:FULL LOAD AMBIENT TEMPERATURE:25°C AMBIENT HUMIDITY:95%	AFTER 15 hrs POWER ON NON BREAK																																	
19	TEMPERATURE RISE TEST Trise OF PARTS	A: I/P :230VAC AFTER 3 hr BURN-IN O/P :FULL LOAD TA:30°C <table><tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr><tr><td>BD1</td><td>BRIDGE DIODE</td><td>76.7°C</td><td>46.7°C</td></tr><tr><td>Q1</td><td>MAIN TRANSISTOR</td><td>83.5°C</td><td>53.5°C</td></tr><tr><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>91.9°C</td><td>61.9°C</td></tr><tr><td>D50</td><td>O/P DIODE</td><td>92.3°C</td><td>62.3°C</td></tr><tr><td>C51</td><td>O/P FILTER CAPACITOR</td><td>78.2°C</td><td>48.2°C</td></tr><tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>84.0°C</td><td>54.0°C</td></tr><tr><td>LF1</td><td>I/P FILTER TRANSFORMER</td><td>67.8°C</td><td>57.8°C</td></tr></table>		POSITION	P/N	TEMP	Trise	BD1	BRIDGE DIODE	76.7°C	46.7°C	Q1	MAIN TRANSISTOR	83.5°C	53.5°C	T1	MAIN TRANSFORMER WIRE	91.9°C	61.9°C	D50	O/P DIODE	92.3°C	62.3°C	C51	O/P FILTER CAPACITOR	78.2°C	48.2°C	C5	I/P FILTER CAPACITOR	84.0°C	54.0°C	LF1	I/P FILTER TRANSFORMER	67.8°C	57.8°C	P
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LF1	I/P FILTER TRANSFORMER	67.8°C	57.8°C																																	
20	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	B: FUSE :2A/250V BRIDGE DIODE :D3SB60 LINE FILTER :TF0484 TRANSFOMER TF-791 POWER SWITCHER :SPP07N60C2 OUTPUT DIODE :BYQ28X-200 OUTPUT CAPACITOR :1200uF/16V 105° LL3K INPUT CAPACITOR :HITACHI 150uF/400V 85°C P.C.B :MPT-65-R3																																		
21	LIFE CYCLE	B: SUPPOSE C23 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc23:74.5°C Life: 49314hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc23:95.2°C Life: 11744hrs		P																																
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																
20011110	RD SAMPLE MPD-65A MPD-65B	PASS	VINCENT	MAX LIN																																
20011210	PRODUCT A109C24C MPD-65A MPD-65B	PASS	VINCENT	MAX LIN																																
20020919	PRODUCT A208A10 MPD-65B	PASS	VINCENT	MAX LIN																																
20021206	PRODUCT A209A10A MPD-65A	PASS	VINCENT	MAX LIN																																