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Quality Engineering Test Report

SERIES: MPS-30 30W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. MPS-30-5V :5V/5A B. MPS-30-12V :12V/2.5A C. MPS-30-15V :15V/2A
D. MPS-30-24V :24V/1.2A E. MPS-30-27V :27V/1.1A F. MPS-30-48V :48V/0.6A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:88~264VAC O/P:FULL LOAD	A. 62.15 V ~ 264 VAC B. 70.00 V ~ 264 VAC C. 66.03 V ~ 264 VAC D. 66.01 V ~ 264 VAC E. 70.00 V ~ 264 VAC F. 70.05 V ~ 264 VAC	P
2	LINE REGULATION	I/P:88~264VAC SPEC: A:±1% O/P:FULL LOAD B:±1% C:±0.5% D:±0.5% E:±0.5% F:±0.5%	A. +0.00% ~ +0.119% B. -0.05% ~ +0.00% C. -0.04% ~ +0.00% D. -0.024% ~ +0.00% E. -0.022% ~ +0.00% F. -0.025% ~ +0.00%	P
3	LOAD REGULATION	I/P:230VAC SPEC: A:±2% O/P:MIN. TO FULL LOAD B:±1% C:±1% D:±1% E:±1% F:±1%	A. -0.238 % ~ +0.357 % B. -0.05 % ~ +0.05 % C. -0.04 % ~ +0.04 % D. -0.024 % ~ +0.024 % E. -0.022 % ~ +0.022 % F. -0.012 % ~ +0.012 %	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:88~264VAC SPEC: A:±3% B:±3% C:±3% D:±3% E:±3% F:±2% O/P:0% TO FULL LOAD	A. -0.49 % ~ +0.118 % B. -0.208 % ~ +0.0499 % C. -0.04 % ~ +0.00 % D. -0.078 % ~ +0.049 % E. -0.044 % ~ +0.00 % F. -0.039 % ~ +0.012 %	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: A: 80mV B: 120mV C: 150mV D: 240mV E: 240mV F: 240mV O/P:FULL LOAD	A: 9 mV B: 14 mV C: 13 mV D: 12 mV E: 12 mV F: 60 mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:0.5A O/P:FULL LOAD	A: 0.303 A B: 0.346 A C: 0.337 A D: 0.323 A E: 0.33 A F: 0.318 A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:35A O/P: FULL LOAD	A: 28.8A B: 27.648A C: 23.265A D: 27.56A E: 25.062A F: 26.47A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 4.85V~5.15V O/P:MIN. LOAD B: 11.64V~12.36V C: 14.55V~15.45V D: 23.28V~24.72V E: 26.17V~27.81V F: 47.04V~48.96V	A. 5.032 V B. 12.003 V C. 14.925 V D. 24.135 V E. 27.22 V F. 47.94 V	P
9	SET UP TIME	I/P:230VAC SPEC:500mS O/P:FULL LOAD	A: 311.76mS B: 311.9mS C: 357.32mS D: 389.07mS E: 326.76mS F: 254.51mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:50mS O/P:FULL LOAD	A: 91.73mS B: 80.69mS C: 83.07mS D: 90.29mS E: 87.2mS F: 90.81mS	P

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11	RISE TIME	I/P:230VAC O/P:FULL LOAD SPEC:30mS	A: 5.23mS B: 2.385mS C: 2.575mS D: 5.166mS E: 6.24mS F: 5.945mS	P
12	EFFICIENCY	I/P:230VAC O/P:FULL LOAD SPEC: A:72% B:75% C:76% D:77% E:78% F:78%	A: 74.51% B: 75.57% C: 77.29% D: 78.89% E: 79.02% F: 79%	P
13	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC: ABOVE 105%	A: 300% B: 257% C: 265% D: 271% E: 286% F: 305%	P
14	OVER VOLTAGE PROTECTION	I/P:230VAC O/P: 0% LOAD SPEC:110%~135% A:5.5V~6.75V B:13.2V~16.2V C:16.5V~20.25V D:26.4V~32.4V E:29.7V~36.45V F:52.8V~64.8V	A: 5.9 V B: 13.8 V C: 18.8 V D: 29.6 V E: 34.2 V F: 57.7 V	P
15	GROUND LEAKAGE CURRENT	I/P:264VAC SPEC: L-FG-<0.3mA N-FG-<0.3mA	A: L-FG: 0.168 mA N-FG: 0.168 mA B: L-FG: 0.134 mA N-FG: 0.13 mA C: L-FG: 0.159 mA N-FG: 0.158 mA D: L-FG: 0.128 mA N-FG: 0.129 mA E: L-FG: 0.13 mA N-FG: 0.13 mA F: L-FG: 0.162 mA N-FG: 0.16 mA	P
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 C: TEST OK D: TEST OK E: TEST OK F: TEST OK	P
17	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P-O/P: 4KVAC/ 1 min. I/P-FG: 1.5KVAC/ 1 min. O/P-FG: SHORT	A: I/P-O/P: 3.1 mA I/P-FG: 1.964 mA O/P-FG: --- mA B: I/P-O/P: 4.2 mA I/P-FG: 1.7 mA O/P-FG: --- mA C: I/P-O/P: 2.9 mA I/P-FG: 1.7 mA O/P-FG: --- mA D: I/P-O/P: 3.8 mA I/P-FG: 1.6 mA O/P-FG: --- mA E: I/P-O/P: 4.2 mA I/P-FG: 1.6 mA O/P-FG: --- mA I/P-O/P: 2.9 mA	P

	I/P-FG:	1.8	mA
F:	O/P-	---	mA
	FG:		

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NO	TEST ITEM			VERDICT																												
18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:26.8°C BURN-IN DURATION : 15 hrs	A:NON BREAK	P																												
19	ENVIRONMENT TEST (SAMPLE A:)	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:51.9°C	AFTER 8 hrs NON BREAK	P																												
20	TEMPERATURE RISE TEST Trise OF PARTS	<p style="text-align: center;">A: I/P :230VAC AFTER 15 hr BURN-IN O/P :FULL LOAD TA:26.8°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>Trise</th> </tr> </thead> <tbody> <tr> <td>BD1</td> <td>BRIDGE DIODE</td> <td>53.1°C</td> <td>26.3°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER WIRE</td> <td>75.4°C</td> <td>48.6°C</td> </tr> <tr> <td>D7</td> <td>O/P DIODE</td> <td>74.1°C</td> <td>47.3°C</td> </tr> <tr> <td>C52</td> <td>O/P FILTER CAPACITOR</td> <td>69.0°C</td> <td>42.2°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>53.7°C</td> <td>26.9°C</td> </tr> <tr> <td>LF1</td> <td>I/P FILTER TRANSFORMER</td> <td>40.9°C</td> <td>14.1°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	Trise	BD1	BRIDGE DIODE	53.1°C	26.3°C	T1	MAIN TRANSFORMER WIRE	75.4°C	48.6°C	D7	O/P DIODE	74.1°C	47.3°C	C52	O/P FILTER CAPACITOR	69.0°C	42.2°C	C5	I/P FILTER CAPACITOR	53.7°C	26.9°C	LF1	I/P FILTER TRANSFORMER	40.9°C	14.1°C	P
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21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	<p>A: FUSE :2.5A/250V BRIDGE DIODE :KBP208G 2A/800V TRANSFORMER TF813-R1 EFD-30 OUTPUT DIODE :YG802C03R 10A/30V OUTPUT CAPACITOR :RUBYCON 1000u/10V ZL INPUT CAPACITOR :68u/400V 105°C P.C.B :MPS-30-R1 FR-4 20Z DS</p>																														
22	LIFE CYCLE	<p>A: SUPPOSE C52 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:22.4°C TC52:69.4°C Life: 30347hrs I/P:230VAC O/P:FULL LOAD Ta:51.9°C TC52:87.9°C Life: 22984hrs</p>		P																												
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																												
20020301	RD SAMPLE	PASS	VINCENT	MAX LIN																												
20020620	PRODUCT SAMPLE A203A33 5,12,15,24,27,48V	PASS	VINCENT	MAX LIN																												
20020726	PRODUCT SAMPLE A207A04 12,15,24,27,48V	PASS	VINCENT	MAX LIN																												

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