

Quality Engineering Test Report

SERIES: 45W DUAL OUTPUT OPEN FRAME SWITCHING POWER SUPPLY

SAMPLE:	A.PD-45A	V1:+5V / 3.2A
		V2:+12V / 2A
	B.PD-45B	V1:+5V /3.2A
		V2:+24V /1.2A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING O/P:FULL LOAD SPEC:90~264VAC	<u>61.82VAC~267VAC</u>	P
2	LINE REGULATION	I/P:85~264VAC O/P:FULL LOAD SPEC: A : V1 :±1% V2 :±2% B : V1 :±1% V2 :±2%	A: V1: <u>+0.12%~-0.24%</u> V2: <u>+0.05%~-0.87%</u> B: V1: <u>+0 %~-0.62%</u> V2: <u>-0.11%~+1.37%</u>	P
3	LOAD REGULATION	I/P:230VAC O/P:MIN. TO FULL LOAD SPEC: A : V1 : ±3% V2 : ±4% B : V1 : ±3% V2 : ±4%	A: V1: <u>-0.12%~+0.12%</u> V2: <u>+0.51%~-0.26%</u> B: V1: <u>-0.49 %~+0.24%</u> V2: <u>+1.18%~-0.59%</u>	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: A : V1:4% V2:7% B : V1:4% V2:7%	A: V1: <u>+1 %~-1.88%</u> V2: <u>+3.06%~-3.49%</u>	P
5	RIPPLE&NOISE	I/P:230VAC O/P:FULL LOAD SPEC: A : V1 :50mV V2 :120mV B : V1 :50mV V2 :150mV	A: V1: <u>12mV</u> V2: <u>81mV</u> B: V1: <u>4mV</u> V2: <u>30mV</u>	P
6	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD SPEC:0.7A	<u>A:0.474A</u>	P
7	MAX. INRUSH CURREN	I/P:230VAC O/P: FULL LOAD COLD START SPEC:40A	<u>A:28.656A</u>	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC:CH1:4.75V~5.5V (-5%~+10%)	<u>A:3V~6V</u>	P
9	SET UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD SPEC:800ms	A: V1: <u>601.659mS</u> V2: <u>601.451mS</u>	P
10	HOLD UP TIME	I/P:230VAC\60Hz O/P:FULL LOAD SPEC:20mS	A: V1: <u>94.309mS</u> V2: <u>94.955mS</u>	P
11	EFFICIENCY	I/P:230VAC O/P:FULL LOAD SPEC: A:77% B:78%	A: <u>78.8%</u> B: <u>80.212%</u>	P
12	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING SPEC:53W~75W	A: <u>58.726W</u> B: <u>70.784W</u>	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:FULL LOAD SPEC:5.75V~6.75VDC ON CH1	A : V1: <u>6.05V</u> B : V2: <u>6.00V</u>	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG----<0.5mA N-FG----<0.5mA	A: L-FG: <u>0.415mA</u> N-FG: <u>0.418mA</u>	P

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15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 50M Ohms MIN. I/P-O/P 500VDC / 50M Ohms MIN. I/P-FG 500VDC / 50M Ohms MIN.	A: O/P-FG: >1000M Ohms I/P-O/P: >1000M Ohms I/P-FG : >1000M Ohms	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 :4mA I/P-FG :3.4 mA O/P-FG :4.6 mA	P																																													
17	BURNIN TEST	I/P: 230VAC O/P:FULL LOAD TA:25.5°C BURN-IN DURATION:4hrs	NO BREAK	P																																													
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:83VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-10°C	A: AFTER 1.5 hrs POWER ON OK	P																																													
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:50°C	A: AFTER 1 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 14 hrs NON BREAK																																														
19	TEMPERATURE RISE T rise OF PARTS	<p>A: I/P :230VAC O/P :FULL LOAD AFTER 4hrs BURN-IN TA:25.5°C</p> <table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>50.6°C</td> <td>25.6°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>63.4°C</td> <td>38.4°C</td> </tr> <tr> <td></td> <td>D1</td> <td>CLAMPING DIODE</td> <td>73.1°C</td> <td>48.1°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P CAP</td> <td>52.1°C</td> <td>27.1°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>75.4°C</td> <td>50.3°C</td> </tr> <tr> <td></td> <td>D4</td> <td>O/P DIODE</td> <td>74.1°C</td> <td>49.1°C</td> </tr> <tr> <td>*</td> <td>D5</td> <td>O/P DIODE</td> <td>77.8°C</td> <td>52.8°C</td> </tr> <tr> <td></td> <td>C22</td> <td>O/P CAP</td> <td>66.5°C</td> <td>41.5°C</td> </tr> </tbody> </table>			POSITION	P/N	TEMP	T rise		BD1	BRIDGE DIODE	50.6°C	25.6°C		Q1	MAIN TRANSISTOR	63.4°C	38.4°C		D1	CLAMPING DIODE	73.1°C	48.1°C		C5	I/P CAP	52.1°C	27.1°C		T1	MAIN TRANSFORMER	75.4°C	50.3°C		D4	O/P DIODE	74.1°C	49.1°C	*	D5	O/P DIODE	77.8°C	52.8°C		C22	O/P CAP	66.5°C	41.5°C	* NOTE1
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20	LIFE CYCLE	<p>SUPPOSE C22 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C C22:66.5°C Life:81468 hrs I/P:230VAC O/P:FULL LOAD Ta:50°C C22:83°C Life:25842 hrs</p>		P																																													
21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	<p>FUSE : CQ GFE 3A/250V BRIDGE DIODE : LT KBJ 408G. (GLASS) LINE FILTER : TF484 ET-20V TRANSFOMER : ER-28 TF449 POWER SWITCHER : K2545 6A/600V TO-220F OUTPUT DIODE : BYQ-26-200 10A/200V TO-220F OUTPUT CAPACITOR : ELNA 820uf/16V 105°C(M) RJH INPUT CAPACITOR : RNBYCON 100uf/400V 85°C USP P.C.B : 128mm x 76mm 2 OZ CEM-3</p>																																															
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																													
971127	PD-45	.NOTE1:WORKING TEMPERATURE >= 45°C OUTPUT SHOULD DERATING.	H.C.LIOU	Max Lin																																													