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# Quality Engineering Test Report

**SERIES: SD-50B 50W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE:**  
**A. SD-50B-5 5V / 10A**  
**B. SD-50B-12 12V / 4.2A**  
**C. SD-50B-24 24V / 2.1A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	DC INPUT VOLTAGE RANGE	I/P : TESTING SPEC : 19~36VDC O/P : FULL LOAD	A:15.4~36VDC	P
2	LINE REGULATION	I/P : 19~36VDC SPEC : A:±0.5% O/P : FULL LOAD B:±0.3% C:±0.2%	A: -0%~+0% B: -0%~+0% C:-0.03%~+0%	P
3	LOAD REGULATION	I/P : 24VDC SPEC : A:±0.5% O/P : MIN. TO FULL LOAD B:±0.3% C:±0.2%	A:-0.12%~+0.12% B: -0%~+0.05% C:-0.03%~+0%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P : 19~36VDC SPEC : A:±2% O/P : MIN. TO FULL LOAD B:±1% C:±1%	A:-0.12%~+0.12% B: -0%~+0.05% C:-0.03%~+0%	P
5	RIPPLE&NOISE	I/P : 24VDC SPEC : A:100mVp-p O/P : FULL LOAD B:120mVp-p C:150mVp-p	A:25mV B: 8mV C: 8mV	P
6	DC INPUT CURRENT	I/P : 24VDC SPEC : 3A O/P : FULL LOAD	A:2.75A	P
7	MAX. INRUSH CURRENT	I/P : 24VDC SPEC : NONE O/P : FULL LOAD	A:38.26A	P
8	O/P VOLTAGE ADJ. RANGE	I/P : 24VDC SPEC : A:4.5~5.5V O/P : MIN. LOAD B:11~16V C:23~30V	A:4.32~6.21V B:9.47~16.30V C:19.5~33.68V	P
9	SET UP TIME	I/P : 24VDC SPEC : 2.5S O/P : FULL LOAD	A:2000.3mS	P
10	EFFICIENCY	I/P : 24VDC SPEC : A:73% O/P : FULL LOAD B:75% C:80%	A:77.15% B:79.44% C:82.07%	P
11	OVER LOAD PROTECTION	I/P : 24VDC SPEC : 105%~150% O/P : TESTING	A:130% B:116.9% C:114.7%	P
12	OVER VOLTAGE PROTECTION	I/P : 24VDC SPEC : A:5.75V~6.75V O/P : TESTING B:16.8V~20V C:31.5V~37.5V	A:6.12V B:18.17V C:35.17V	P
13	INSULATION RESISTANCE	SPEC : I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN. O/P-FG 500VDC/100M Ohms MIN.	A: I/P-O/P : >100M Ohms I/P-FG : >100M Ohms O/P-FG : >100M Ohms	P
14	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P : 1500VAC/ 1 min (10mA CUT-OFF) I/P- FG : 1500VAC/ 1 min (10mA CUT-OFF) O/P- FG : 500VAC/ 1 min (10mA CUT-OFF)	A: I/P-O/P : <2.24mA I/P-FG : <2.36mA O/P-FG : <3.34mA	P
15	BURN-IN TEST	I/P : 24VDC O/P:FULL LOAD TA : 25.7 °C BURN-IN DURATION : 4 hrs	NON BREAK	P
16	ENVIRONMENT TEST (SAMPLE A:)	1.LOW TEMPERATURE TEST I/P : 18.1 VDC O/P : FULL LOAD AMBIENT TEMPERATURE : -10 °C	AFTER 2 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 37VDC O/P : FULL LOAD AMBIENT TEMPERATURE : 45.4 °C	AFTER 4 hrs NON BREAK	

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NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																												
17	TEMPERATURE RISE TEST T rise OF PARTS	<p>A: I/P : 24VDC                      AFTER 4 hr BURN-IN  O/P : FULL LOAD                      TA : 24.6°C</p> <table border="1"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>53.2°C</td> <td>28.6°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>62.3°C</td> <td>37.7°C</td> </tr> <tr> <td>D11</td> <td>O/P DIODE</td> <td>62.5°C</td> <td>37.9°C</td> </tr> <tr> <td>C34</td> <td>O/P FILTER CAPACITOR</td> <td>53.0°C</td> <td>28.4°C</td> </tr> <tr> <td>L1</td> <td>O/P CHOCK</td> <td>59.3°C</td> <td>34.7°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>49.3°C</td> <td>24.7°C</td> </tr> </tbody> </table>	POSITION	P/N	TEMP	T rise	Q1	MAIN TRANSISTOR	53.2°C	28.6°C	T1	MAIN TRANSFORMER	62.3°C	37.7°C	D11	O/P DIODE	62.5°C	37.9°C	C34	O/P FILTER CAPACITOR	53.0°C	28.4°C	L1	O/P CHOCK	59.3°C	34.7°C	C5	I/P FILTER CAPACITOR	49.3°C	24.7°C		P
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18	LIFE CYCLE	<p>A: SUPPOSE C34 IS THE MOST CRITICAL COMPONENT  I/P : 24VDC O/P : FULL LOAD Ta : 25°C    Tc34 : 53.4°C Life: 42971 hrs  I/P : 24VDC O/P : FULL LOAD Ta : 45.4°C    Tc34 : 56.2°C Life: 35390 hrs</p>		P																												
19	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	<p>A: FUSE : 6.3AL/250V  INPUT DIODE : 1N5401  LINE FILTER : LS TF-096B EE-25  TRANSFOMER : CK TF-332 EI-28  POWER SWITCHER : 2SK889 TO-220  OUTPUT DIODE : S305C4M  OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL  INPUT CAPACITOR : N.C.C 330uF/100V KMF 105°C  P.C.B : SD-50 FR-4 2 OZ DS</p>																														
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																												
980421	SD-50B	PASS	H.C.LIOU	Max Lin																												

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