

# Quality Engineering Test Report

**SERIES: SD-25A 25W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE:                   A. SD-25A-5    5V / 5A**  
**B. SD-25A-12  12V / 2.1A**  
**C. SD-25A-24  24V / 1.1A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	DC INPUT VOLTAGE RANGE	I/P : TESTING            SPEC : 9.2~18VDC O/P : FULL LOAD	A:8.4~18VDC	P
2	LINE REGULATION	I/P : 9.2~18VDC        SPEC : A:±0.5% O/P : FULL LOAD        B:±0.3% C:±0.2%	A: -0%~+0% B:-0.05%~+0% C:-0.03%~+0%	P
3	LOAD REGULATION	I/P : 12VDC             SPEC : A:±0.5% O/P : MIN. TO FULL LOAD   B:±0.3% C:±0.2%	A:-0.12%~+0% B: -0%~+0% C: -0%~+0%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P : 9.2~18VDC        SPEC : A:±2% O/P : MIN. TO FULL LOAD   B:±1% C:±1%	A:-0.12%~+0% B:-0.05%~+0% C:-0.03%~+0%	P
5	RIPPLE&NOISE	I/P : 12VDC             SPEC : A:100mVp-p O/P : FULL LOAD        B:120mVp-p C:150mVp-p	A:24mV B:12mV C:10mV	P
6	DC INPUT CURRENT	I/P : 12VDC             SPEC : 3.2A O/P : FULL LOAD	A:2.77A	P
7	MAX. INRUSH CURRENT	I/P : 12VDC             SPEC : NONE O/P : FULL LOAD	A:13.7A	P
8	O/P VOLTAGE ADJ. RANGE	I/P : 12VDC             SPEC : A:4.5~5.5V O/P : MIN. LOAD        B:11~16V C:23~30V	A:4.39~6.21V B:9.65~16.37V C:19.15~33.58V	P
9	SET UP TIME	I/P : 12VDC             SPEC : 2.5S O/P : FULL LOAD	A:340.8mS	P
10	EFFICIENCY	I/P : 12VDC             SPEC : A:71% O/P : FULL LOAD        B:72% C:75%	A:72.0% B:73.3% C:75.0%	P
11	OVER LOAD PROTECTION	I/P : 12VDC             SPEC : 105%~150% O/P : TESTING	A:107.0% B:107.4% C:118.6%	P
12	OVER VOLTAGE PROTECTION	I/P : 12VDC             SPEC : A:5.75V~6.75V O/P : 10% LOAD        B:16.8V~20V C:31.5V~37.5V	A:6.51V B:17.67V C:33.29V	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 : <1.65mA I/P-FG : <2.52mA O/P-FG : <0.88mA	P
15	BURN-IN TEST	I/P : 12VDC             O/P:FULL LOAD TA : 25 °C             BURN-IN DURATION : 4 hrs	NON BREAK	P
16	ENVIRONMENT TEST (SAMPLE A:)	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 12VDC             O/P : FULL LOAD AMBIENT TEMPERATURE : 42.0°C	AFTER 4 hrs NON BREAK	P

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17	TEMPERATURE RISE TEST T rise OF PARTS	<p>A: I/P : 12VDC AFTER 4 hr BURN-IN O/P : FULL LOAD TA : 25°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>83.8°C</td> <td>58.8°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>67.5°C</td> <td>42.5°C</td> </tr> <tr> <td>D11</td> <td>O/P DIODE</td> <td>85.1°C</td> <td>60.1°C</td> </tr> <tr> <td>C33</td> <td>O/P FILTER CAPACITOR</td> <td>51.4°C</td> <td>26.4°C</td> </tr> <tr> <td>L1</td> <td>O/P CHOCK</td> <td>64.0°C</td> <td>39.0°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>73.2°C</td> <td>48.2°C</td> </tr> </tbody> </table>	POSITION	P/N	TEMP	T rise	Q1	MAIN TRANSISTOR	83.8°C	58.8°C	T1	MAIN TRANSFORMER	67.5°C	42.5°C	D11	O/P DIODE	85.1°C	60.1°C	C33	O/P FILTER CAPACITOR	51.4°C	26.4°C	L1	O/P CHOCK	64.0°C	39.0°C	C5	I/P FILTER CAPACITOR	73.2°C	48.2°C		P
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18	LIFE CYCLE	<p>A: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT</p> <p>I/P : 12VDC O/P : FULL LOAD Ta : 25°C Tc33 : 51.4°C Life: 82139 hrs</p> <p>I/P : 12VDC O/P : FULL LOAD Ta : 42°C Tc33 : 62.2°C Life: 38854 hrs</p>		P																												
19	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	<p>A: FUSE : F 10A/250V G PH UL</p> <p>INPUT DIODE : 1N5401</p> <p>LINE FILTER : LF TF-345</p> <p>TRANSFOMER : MT TF-333-R1 EI-25</p> <p>POWER SWITCHER : 2SK2049 TO-220</p> <p>OUTPUT DIODE : CTB-24L TO-220</p> <p>OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL</p> <p>INPUT CAPACITOR : 220uF/100V(v) 105°C HL</p> <p>P.C.B : SD-25-R1 FR-4 2 OZ DS</p>																														
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																												
980423	SD-25A	PASS	H.C.LIOU	Max Lin																												