

# Quality Engineering Test Report

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

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

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	DC INPUT VOLTAGE RANGE	I/P : TESTING            SPEC : 19~36VDC O/P : FULL LOAD	C:14.3~36VDC	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%~+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%~+0.12% B:-0%~+0% C:-0%~+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%~+0.12% B:-0%~+0.05% C:-0%~+0.03%	P
5	RIPPLE&NOISE	I/P : 24VDC                SPEC : A:100mVp-p O/P : FULL LOAD            B:120mVp-p C:150mVp-p	A:28mV B:14mV C:15mV	P
6	DC INPUT CURRENT	I/P : 24VDC                SPEC : 1.6A O/P : FULL LOAD	C:1.33A	P
7	MAX. INRUSH CURRENT	I/P : 24VDC                SPEC : NONE O/P : FULL LOAD	C:39.4A	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:4.42~6.28V B:9.40~16.26V C:19.93~33.56V	P
9	SET UP TIME	I/P : 24VDC                SPEC : 2.5S O/P : FULL LOAD	C:2001.1mS	P
10	EFFICIENCY	I/P : 24VDC                SPEC : A:72% O/P : FULL LOAD            B:75% C:78%	A:78.6% B:80.2% C:82.3%	P
11	OVER LOAD PROTECTION	I/P : 24VDC                SPEC : 105%~150% O/P : TESTING	A:125% B:116.9% C:118.6%	P
12	OVER VOLTAGE PROTECTION	I/P : 24VDC                SPEC : A:5.75V~6.75V O/P : 10% LOAD            B:16.8V~20V C:31.5V~37.5V	A:6.31V B:18.07V C:32.85V	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.	C: 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)	C: I/P-O/P : <2.39mA I/P-FG : <4.9mA O/P-FG : <1.55mA	P
15	BURN-IN TEST	I/P : 24VDC                O/P:FULL LOAD TA : 25.5 °C                BURN-IN DURATION : 2 hrs	NON BREAK	P
16	ENVIRONMENT TEST (SAMPLE C:)	1.LOW TEMPERATURE TEST I/P : 18.5 VDC                O/P : FULL LOAD AMBIENT TEMPERATURE : -10°C	AFTER 1.5 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 36.5VDC                O/P : FULL LOAD AMBIENT TEMPERATURE : 45.4°C	AFTER 2 hrs NON BREAK	

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17	TEMPERATURE RISE TEST T rise OF PARTS	<p>C: I/P : 24VDC AFTER 2 hr BURN-IN O/P : FULL LOAD 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>Q1</td> <td>MAIN TRANSISTER</td> <td>50.1°C</td> <td>24.6°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>58.3°C</td> <td>32.8°C</td> </tr> <tr> <td></td> <td>D11</td> <td>O/P DIODE</td> <td>58.6°C</td> <td>33.1°C</td> </tr> <tr> <td></td> <td>C33</td> <td>O/P FILTER CAPACITOR</td> <td>40.3°C</td> <td>14.8°C</td> </tr> <tr> <td></td> <td>L1</td> <td>O/P CHOCK</td> <td>54.7°C</td> <td>29.2°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>45.7°C</td> <td>20.2°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	T rise		Q1	MAIN TRANSISTER	50.1°C	24.6°C		T1	MAIN TRANSFORMER	58.3°C	32.8°C		D11	O/P DIODE	58.6°C	33.1°C		C33	O/P FILTER CAPACITOR	40.3°C	14.8°C		L1	O/P CHOCK	54.7°C	29.2°C		C5	I/P FILTER CAPACITOR	45.7°C	20.2°C		P
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18	LIFE CYCLE	<p>C: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT I/P : 24VDC O/P : FULL LOAD Ta : 25°C Tc33 : 39.8°C Life: 218989 hrs I/P : 24VDC O/P : FULL LOAD Ta : 45.4°C Tc33 : 51.2°C Life: 148541 hrs</p>		P																																			
19	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	<p>C: FUSE : 5A/250V G PH INPUT DIODE : 1N5401 LINE FILTER : LS TF-346 TRANSFOMER : MT TF-338-R2 EI-25 POWER SWITCHER : K2391 TO-220 OUTPUT DIODE : BYQ28X-200 OUTPUT CAPACITOR : 330uF/50V(v) 105°C HL INPUT CAPACITOR : N.C.C 330uF/100V SL 2Kh P.C.B : FR-4 2 OZ DS SD-25-R1</p>																																					
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																			
980420	SD-25B	PASS	H.C.LIOU	Max Lin																																			