

Quality Engineering Test Report

SERIES: SD-100B 100W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. SD-100B-5 5V / 20A
B. SD-100B-12 12V / 8.5A
C. SD-100B-24 24V / 4.2A

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|----|--------------------------------|---|---|---------|
| 1 | DC INPUT VOLTAGE RANGE | I/P : TESTING SPEC : 19~36VDC O/P : FULL LOAD | A:17.2~36VDC | P |
| 2 | LINE REGULATION | I/P : 19~36VDC SPEC : A:±0.5% O/P : FULL LOAD B:±0.3% C:±0.2% | A:-0.14%~+0% B: -0%~+0.03% 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%~+0.05% | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | I/P : 19~36VDC SPEC : A:±2% O/P : MIN. TO FULL LOAD B:±1% C:±1% | A:-0.14%~+0.24% B: -0%~+0.2% C:-0.03%~+0.05% | P |
| 5 | RIPPLE&NOISE | I/P : 24VDC SPEC : A:100mVp-p O/P : FULL LOAD B:120mVp-p C:150mVp-p | A: 22mV B: 18mV C: 7mV | P |
| 6 | DC INPUT CURRENT | I/P : 24VDC SPEC : 6A O/P : FULL LOAD | A:5.9A | P |
| 7 | MAX. INRUSH CURRENT | I/P : 24VDC SPEC : NONE O/P : FULL LOAD | A:45.7A | 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:4.36~6.22V B:9.27~16.44V C:22.40~33.12V | P |
| 9 | SET UP TIME | I/P : 24VDC SPEC : 2S O/P : FULL LOAD | A:1826.2mS | P |
| 10 | EFFICIENCY | I/P : 24VDC SPEC : A:74% O/P : FULL LOAD B:75% C:78% | A:74.7% B:76.1% C:80.3% | P |
| 11 | OVER LOAD PROTECTION | I/P : 24VDC SPEC : 105%~135% O/P : TESTING | A:125% B:116.8% C:128.8% | 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:6.35V B:17.51V C:34.82V | 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 : <3.49mA I/P-FG : <4.46mA O/P-FG : <3.21mA | P |
| 15 | BURN-IN TEST | I/P : 24VDC O/P:FULL LOAD TA : 22.4°C BURN-IN DURATION : 1 hrs | NON BREAK | P |
| 16 | ENVIRONMENT TEST (SAMPLE A:) | 1.LOW TEMPERATURE TEST I/P : 17.7 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 : 24VDC O/P : FULL LOAD AMBIENT TEMPERATURE : 40°C | AFTER 1 hrs NON BREAK | |

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|----------|--|--|----------|----------|------|--------|----|-----------------|--------|--------|----|------------------|--------|--------|-----|-----------|--------|--------|-----|----------------------|--------|--------|----|-----------|--------|--------|----|----------------------|--------|--------|--|---|
| 17 | TEMPERATURE RISE TEST T rise OF PARTS | <p>A: I/P : 24VDC AFTER 1 hr BURN-IN O/P : FULL LOAD TA : 22.4C</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>88.9°C</td> <td>66.5°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>84.8°C</td> <td>62.4°C</td> </tr> <tr> <td>D11</td> <td>O/P DIODE</td> <td>82.6°C</td> <td>60.2°C</td> </tr> <tr> <td>C33</td> <td>O/P FILTER CAPACITOR</td> <td>68.0°C</td> <td>45.6°C</td> </tr> <tr> <td>L1</td> <td>O/P CHOCK</td> <td>86.4°C</td> <td>64.0°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>48.1°C</td> <td>25.7°C</td> </tr> </tbody> </table> | POSITION | P/N | TEMP | T rise | Q1 | MAIN TRANSISTOR | 88.9°C | 66.5°C | T1 | MAIN TRANSFORMER | 84.8°C | 62.4°C | D11 | O/P DIODE | 82.6°C | 60.2°C | C33 | O/P FILTER CAPACITOR | 68.0°C | 45.6°C | L1 | O/P CHOCK | 86.4°C | 64.0°C | C5 | I/P FILTER CAPACITOR | 48.1°C | 25.7°C | | P |
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| C5 | I/P FILTER CAPACITOR | 48.1°C | 25.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | LIFE CYCLE | <p>A: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT I/P : 24VDC O/P : FULL LOAD Ta : 25°C Tc33 : 68.0°C Life: 22110 hrs I/P : 24VDC O/P : FULL LOAD Ta : 40°C Tc33 : 76.0°C Life: 12699 hrs</p> | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY) | <p>A: FUSE : F 10AL/250V 5x20 G UL INPUT DIODE : 1N5401 LINE FILTER : LF TF-096A EE-25 TRANSFOMER : MT TF-308-R1 EER-28L POWER SWITCHER : 2SK850 TO-3P OUTPUT DIODE : CTB-34M TO-3P OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL INPUT CAPACITOR : N.C.C 330uF/100V KMF 105°C P.C.B : SD-100N-R2 FR-4 2 OZ DS</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DATE | SAMPLE | TEST RESULT | TEST | APPROVAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 980423 | SD-100B | PASS | H.C.LIOU | Max Lin | | | | | | | | | | | | | | | | | | | | | | | | | | | | |