

Quality Engineering Test Report

SERIES: SD-100C

100W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE:

A. SD-100C-5 5V / 20A

B. SD-100C-12 12V / 8.5A

C. SD-100C-24 24V / 4.2A

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|----|--------------------------|--|---|---------|
| 1 | DC INPUT VOLTAGE RANGE | I/P : TESTING SPEC : 36~72VDC O/P : FULL LOAD | B:28~72VDC | P |
| 2 | LINE REGULATION | I/P : 36~72VDC 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 : 48VDC SPEC : A:±0.5% O/P : MIN. TO FULL LOAD B:±0.3% C:±0.2% | A:-0.24%~+0.24% B: -0.10%~+0.15% C: -0.02%~+0.02% | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | I/P : 36~72VDC SPEC : A:±2% O/P : MIN. TO FULL LOAD B:±1% C:±1% | A:-0 %~+1.7% B:-0.21%~+0.05% C:-0.08%~+0 % | P |
| 5 | RIPPLE&NOISE | I/P : 48VDC SPEC : A:100mVp-p O/P : FULL LOAD B:120mVp-p C:150mVp-p | A: 8mV B: 17mV C: 14mV | P |
| 6 | DC INPUT CURRENT | I/P : 48VDC SPEC : 3A O/P : FULL LOAD | B: 2.62A | P |
| 7 | O/P VOLTAGE ADJ. RANGE | I/P : 48VDC SPEC : A:4.5~5.5V O/P : MIN. LOAD B:11~16V C:23~30V | A:4.42~6.19V B:9.38~16.40V C:22.05~32.95V | P |
| 8 | SET UP TIME | I/P : 48VDC SPEC : 2S O/P : FULL LOAD | B:1.8S | P |
| 9 | EFFICIENCY | I/P : 48VDC SPEC : A:75% O/P : FULL LOAD B:77% C:81% | A:79.0% B:81.0% C:84.7% | P |
| 10 | OVER LOAD PROTECTION | I/P : 48VDC SPEC : 105%~135% O/P : TESTING | A:125% B:116.8% C:126.4% | P |
| 11 | OVER VOLTAGE PROTECTION | I/P : 48VDC SPEC : A:5.75V~6.75V O/P : 10% LOAD B:16.8V~20V C:31.5V~37.5V | A:6.45V B:17.5 V C:33.89V | P |
| 12 | 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. | B: I/P-O/P : >100M Ohms I/P-FG : >100M Ohms O/P-FG : >100M Ohms | P |

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|----------|--|---|--|----------|------|--------|----|-----------------|--------|--------|----|------------------|--------|--------|-----|-----------|--------|--------|-----|----------------------|--------|--------|----|-----------|--------|--------|----|----------------------|--------|--------|---|
| 13 | 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) | B: I/P-O/P : <2.59mA I/P-FG : <3.15mA O/P-FG : <3.06mA | P | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | BURN-IN TEST | I/P : 48VDC O/P:FULL LOAD TA : 24.5°C BURN-IN DURATION : 4 hrs | B:NON BREAK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | ENVIRONMENT TEST (SAMPLE A: | B:HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 48VDC O/P : FULL LOAD AMBIENT TEMPERATURE : 40°C | B:AFTER 4 hrs NON BREAK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | TEMPERATURE RISE TEST T rise OF PARTS | B: I/P : 48VDC AFTER 4 hr BURN-IN O/P : FULL LOAD TA : 24.5°C <table border="1" style="margin-left: auto; margin-right: auto;"> <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>82.1°C</td> <td>57.6°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER</td> <td>78.2°C</td> <td>53.7°C</td> </tr> <tr> <td>D11</td> <td>O/P DIODE</td> <td>72.5°C</td> <td>48.0°C</td> </tr> <tr> <td>C33</td> <td>O/P FILTER CAPACITOR</td> <td>59.7°C</td> <td>35.2°C</td> </tr> <tr> <td>L1</td> <td>O/P CHOCK</td> <td>71.8°C</td> <td>47.3°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>45.2°C</td> <td>20.7°C</td> </tr> </tbody> </table> | POSITION | P/N | TEMP | T rise | Q1 | MAIN TRANSISTOR | 82.1°C | 57.6°C | T1 | MAIN TRANSFORMER | 78.2°C | 53.7°C | D11 | O/P DIODE | 72.5°C | 48.0°C | C33 | O/P FILTER CAPACITOR | 59.7°C | 35.2°C | L1 | O/P CHOCK | 71.8°C | 47.3°C | C5 | I/P FILTER CAPACITOR | 45.2°C | 20.7°C | P |
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| 17 | LIFE CYCLE | B: SUPPOSE C33 IS THE MOST CRITICAL COMPONENT I/P : 48VDC O/P : FULL LOAD Ta : 25°C Tc33 : 60.2°C Life: 24250 hrs I/P : 48VDC O/P : FULL LOAD Ta : 40°C Tc33 : 79.2°C Life: 6497hrs | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY) | B: FUSE : 5AL/250V 5x20 G INPUT DIODE : 1N5401 LINE FILTER : LF TF-096B EE-25 TRANSFORMER : MT TF-312-R1 EER-28L POWER SWITCHER : TRFP250 TO-3P OUTPUT DIODE : D9202 TO-3P OUTPUT CAPACITOR : 1000uF/25V(v) 105°C HL INPUT CAPACITOR : 220uF/100V(v) HL 105°C P.C.B : SD-100N-R2 FR-4 2 OZ DS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DATE | SAMPLE | TEST RESULT | TEST | APPROVAL | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 980703 | SD-100C | PASS | H.C.LIOU | Max Lin | | | | | | | | | | | | | | | | | | | | | | | | | | | |