

Quality Engineering Test Report

SERIES: S-50 50W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. S-50-5 5V / 10A
B. S-50-12 12V / 4.2A
C. S-50-15 15V / 3.4A
D. S-50-24 24V / 2.1A

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|----|--------------------------|--|---|---------|
| 1 | AC INPUT VOLTAGE RANGE | I/P : TESTING SPEC : 170~264VAC O/P : FULL LOAD | A : 108VAC~267VAC | P |
| 2 | LINE REGULATION | I/P : 170~264VAC SPEC : A: ±0.5% B: ±0.5% C: ±0.5% D: ±0.5% O/P : FULL LOAD | A: 0%~ 0% B: 0%~ 0% C: 0%~ 0% D: 0%~ 0% | P |
| 3 | LOAD REGULATION | I/P : 230VAC SPEC : A: ±1% B: ±0.5% C: ±0.5% D: ±0.5% O/P : MIN. TO FULL LOAD | A: -0.12%~ +0.12% B: -0.05%~ +0.05% C: 0%~ +0.04% D: 0%~ +0.02% | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | I/P : 170~264VAC SPEC : A: ±2% B: ±1% C: ±1% D: ±1% O/P : 0% TO FULL LOAD | A: -0.26%~ +0.12% B: -0.05%~ 0% C: -0.05%~ +0.04% D: -0.08%~ +0% | P |
| 5 | RIPPLE&NOISE | I/P : 230VAC SPEC : A: 75mV B: 100mV C: 100mV D: 100mV O/P : FULL LOAD | A:20mV B:19mV C:15mV D:15mV | P |
| 6 | AC INPUT CURRENT | I/P : 230VAC SPEC : 0.65A O/P : FULL LOAD | A : 0.63A | P |
| 7 | MAX. INRUSH CURREN | I/P : 230VAC SPEC : 36A O/P : FULL LOAD | A : 28A | P |
| 8 | O/P VOLTAGE ADJ.RANGE | I/P : 230VAC SPEC : A: -5%~+10% B: ±10% C: ±10% D: ±10% O/P : MIN. LOAD | A:4.52V~5.83V B:9.91V~14.74V C:12.55V~17.38V D:19.77V~27.44V | P |
| 9 | SET UP TIME | I/P : 230VAC SPEC : 200mS O/P : FULL LOAD | A: 7mS | P |
| 10 | HOLD UP TIME | I/P : 230VAC SPEC : 20mS O/P : FULL LOAD | A: 62mS | P |
| 11 | EFFICIENCY | I/P : 230VAC SPEC : A:71% B:78% C:78% D:82% O/P : FULL LOAD | A:73.30% B:78.80% C:79.74% D:84% | P |
| 12 | OVER LOAD PROTECTION | I/P : 230VAC SPEC : 105%~150% O/P : TESTING | A:135% B:140% C:134% D:138.5% | P |
| 13 | GROUND LEAKAGE CURRENT | I/P : 240VAC SPEC : L-FG--<3.5mA N-FG--<3.5mA | A: L-FG : 1.29mA N-FG : 1.31mA | P |
| 14 | 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: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms | P |

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|--|---|---|----------|----------|--------|-----|--------------|------|--------|----|-----------------|--------|--------|----|-----------------------|--------|--------|----|-----------|--------|--------|-----|----------------------|--------|--------|----|-------------------------|--------|--------|----|-----------|------|--------|----|----------------------|--------|--------|---|
| 15 | DIELECTRIC / WITHSTAND VOLTAGE | SPEC : I/P - O/P : 1.5KVAC/ 1 min. (10mA CUT-OFF) I/P - FG : 1.5KVAC/ 1 min. (10mA CUT-OFF) O/P -FG : 0.5KVAC/ 1 min. (10mA CUT-OFF) | A: I/P-O/P : 1.90mA I/P-FG : 2.07mA O/P-FG : 1.76mA | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | BURN-IN TEST | I/P: 230VAC O/P: FULL LOAD TA:25.1°C BURN-IN DURATION : 2 hrs | A : NON BREAK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | ENVIRONMENT TEST | HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 230VAC O/P : FULL LOAD AMBIENT TEMPERATURE : 51.4°C | A: AFTER 14.5 hrs NON BREAK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | TEMPERATURE RISE TEST T rise OF PARTS | A: I/P : 230VAC AFTER 2 hr BURN-IN O/P : FULL LOAD TA : 25.1°C <table border="1"> <thead> <tr> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td>BD1</td> <td>BRIDGE DIODE</td> <td>53°C</td> <td>27.9°C</td> </tr> <tr> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>65.7°C</td> <td>40.6°C</td> </tr> <tr> <td>T1</td> <td>MAIN TRANSFORMER WIRE</td> <td>83.5°C</td> <td>58.4°C</td> </tr> <tr> <td>D6</td> <td>O/P DIODE</td> <td>74.3°C</td> <td>49.2°C</td> </tr> <tr> <td>C13</td> <td>O/P FILTER CAPACITOR</td> <td>75.5°C</td> <td>50.4°C</td> </tr> <tr> <td>L1</td> <td>LINE FILTER TRANSFORMER</td> <td>51.4°C</td> <td>26.3°C</td> </tr> <tr> <td>D2</td> <td>FLY DIODE</td> <td>90°C</td> <td>64.9°C</td> </tr> <tr> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>52.8°C</td> <td>27.7°C</td> </tr> </tbody> </table> | POSITION | P/N | TEMP | T rise | BD1 | BRIDGE DIODE | 53°C | 27.9°C | Q1 | MAIN TRANSISTOR | 65.7°C | 40.6°C | T1 | MAIN TRANSFORMER WIRE | 83.5°C | 58.4°C | D6 | O/P DIODE | 74.3°C | 49.2°C | C13 | O/P FILTER CAPACITOR | 75.5°C | 50.4°C | L1 | LINE FILTER TRANSFORMER | 51.4°C | 26.3°C | D2 | FLY DIODE | 90°C | 64.9°C | C5 | I/P FILTER CAPACITOR | 52.8°C | 27.7°C | P |
| POSITION | P/N | TEMP | T rise | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD1 | BRIDGE DIODE | 53°C | 27.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q1 | MAIN TRANSISTOR | 65.7°C | 40.6°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T1 | MAIN TRANSFORMER WIRE | 83.5°C | 58.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D6 | O/P DIODE | 74.3°C | 49.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C13 | O/P FILTER CAPACITOR | 75.5°C | 50.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L1 | LINE FILTER TRANSFORMER | 51.4°C | 26.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D2 | FLY DIODE | 90°C | 64.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C5 | I/P FILTER CAPACITOR | 52.8°C | 27.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | LIFE CYCLE | A: SUPPOSE C13 IS THE MOST CRITICAL COMPONENT I/P : 230VAC O/P : FULL LOAD Ta : 25°C Tc13 : 75.4°C Life: 15562 hrs I/P : 230VAC O/P : FULL LOAD Ta : 45°C Tc13 : 86.9°C Life: 7012.8 hrs | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY) | A: FUSE : 3AL/250V BRIDGE DIODE : D3SB60 LINE FILTER : 3104C TRANSFOMER : TF059N EI-40 POWER SWITCHER : 2SC3679 TO-3P OUTPUT DIODE : CTB34 TO-3P OUTPUT CAPACITOR : 2200uF/16V(v) 105°C VENT INPUT CAPACITOR : RUBYCON 220uF/200V 85°C USP P.C.B : S-50N-R1 CEM-1 1 OZ SS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DATE | SAMPLE | TEST RESULT | | TEST | APPROVAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 980526 | S-50 | PASS | | H.C.LIOU | Max Lin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |