

MODEL : SDR-240-24

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|--|---|--|---------|
| 1 | RIPPLE & NOISE | V1: 50 mVp-p (Max) | I/P: 230VAC O/P:FULL LOAD Ta:25°C | V1: 20 mVp-p (Max) | P |
| 2 | PEAK POWER | V1:360W (>3sec.) | I/P: 230VAC O/P:360W Ta:25°C | Ok | P |
| 3 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 24 V~ 28V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 23.29 V~ 28.61 V/ 230 VAC 23.29 V~ 28.61 V/ 115 VAC | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | V1: 1 %~ -1 % (Max) | I/P: 100 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C | V1: 0.05 %~ -0.05 % | P |
| 5 | LINE REGULATION | V1: 0.5 %~ -0.5 % (Max) | I/P: 100VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0 %~ 0 % | P |
| 6 | LOAD REGULATION | V1: 1 %~ -1 % (Max) | I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C | V1: 0.05 %~ -0.05 % | P |
| 7 | SET UP TIME | 230VAC: 650 ms (Max) 115 VAC: 1300 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 443.7 ms 115VAC/ 890 ms | P |
| 8 | RISE TIME | 230VAC: 60 ms (Max) 115VAC: 60 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 29.3 ms 115VAC/ 28.8 ms | P |
| 9 | HOLD UP TIME | 230VAC: 20 ms (TYP) 115VAC: 20 ms (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 34.4 ms 115 VAC 30.4 ms | P |
| 10 | OVER/UNDERSHOOT TEST | < ±5% | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | TEST: <5 % | P |
| 11 | DYNAMIC LOAD | V1: 2400 mVp-p | I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C | 468 mVp-p | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|--|---|---|---------|
| 1 | INPUT VOLTAGE RANGE | 88VAC~264 VAC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 82 V ~264V | P |
| | | | I/P: LOW-LINE-3V= 85V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE) | TEST: OK | |
| 2 | INPUT FREQUENCY RANGE | 47HZ ~63 HZ NO DAMAGE | I/P: 100 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | POWER FACTOR | 0.94 / 230 VAC(TYP) 0.99 / 115 VAC(TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | PF= 0.947 / 230 VAC PF= 0.997 / 115 VAC | P |
| 4 | EFFICIENCY | 94% (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 94.1 % | P |
| 5 | INPUT CURRENT | 230V/ 1.3 A (TYP) 115V/ 2.6 A (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 1.17 A/ 230 VAC I = 2.29 A/ 115 VAC | P |
| 6 | INRUSH CURRENT | 230V/ 55 A (TYP) 115V/ 33 A (TYP) COLD START | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 54.85 A/ 230 VAC I = 32.3 A/ 115 VAC | P |
| 7 | LEAKAGE CURRENT | < 1 mA / 240 VAC | I/P: 264 VAC O/P:Min LOAD Ta:25°C | L-FG: 0.72 mA N-FG: 0.72 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|--|---------|
| 1 | OVER LOAD PROTECTION | 110%~ 150 % Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery >150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds | I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C | 121 %/ 230 VAC 120 %/ 115 VAC Normally works within 110 ~ 150% rated output power for more than 3 seconds and then shut down o/p voltage with auto-recovery >150% rated power, constant current limiting with auto-recovery within 2 seconds and may cause to shut down if over 2 seconds | P |
| 2 | OVER VOLTAGE PROTECTION | CH1: 29 V~ 33V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 30.09 V/ 230 VAC 30.1 V/ 115 VAC Shut down o/p voltage with auto-recovery | P |
| 3 | OVER TEMPERATURE PROTECTION | SPEC: TSW1: 95 ± 5°C O.T.P. NO DAMAGE | I/P: 230 VAC O/P:FULL LOAD | O.T.P. Active Shut down o/p voltage · recovers automatically after temperature goes down | P |
| 4 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE | I/P: 264 VAC O/P:FULL LOAD Ta:25°C | NO DAMAGE Shut down Re-power ON | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------------------------------|--|-------------------------------|--------|---------|
| 1 | DC OK REALY CONTACT RATINGS (max.) | 60Vdc/0.3A, 30Vdc/1A, 30Vac/0.5A resistive load | I/P: 230 VAC O/P:FULL LOAD | OK | P |

SAFETY TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|--|---|---|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P: 3 KVAC/min I/P-FG: 2 KVAC/min O/P-FG: 0.5 KVAC/min O/P-DC OK:0.5KVAC/min | I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 0.6 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta:25°C | I/P-O/P: 6.07 mA I/P-FG: 4.62 mA O/P-FG: 21.71 mA O/P-DC OK: 0.032 mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C / 70%RH | I/P-O/P: 2.54 GΩ I/P-FG: 1.86 GΩ O/P-FG: 23.2 GΩ NO DAMAGE | P |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40 A / 2min Ta:25°C / 70%RH | 25 mΩ | P |
| 4 | APPROVAL | TUV: Certificate NO : R50136177 UL: File NO : E215312 | | | P |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|---|-------------------------------|---------|
| 1 | HARMONIC | EN61000-3-2,-3 CLASS A CLASS D | I/P: 230/240/220 VAC/50HZ O/P:100/75/50/25%LOAD Ta:25°C | PASS | P |
| 2 | CONDUCTION | EN55022 CLASS B | I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C | PASS Test by certified Lab | P |
| 3 | RADIATION | EN55022 CLASS B | I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C | PASS Test by certified Lab | P |
| 4 | E.S.D | EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 5 | E.F.T | EN61000-4-4 INDUSTRY INPUT: 2KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 6 | SURGE | IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 7 | Test by certified Lab & Test Report Prepare | | | | |

M.T.B.F & LIFE CYCLE CALCULATION

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|----------------|--------|---------|
| 1 | CAPACITOR LIFE CYCLE | SDR-240-24:SUPPOSE C 105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 261285 HRS I/P: 230VAC O/P:FULL LOAD Ta= 60 °C LIFE TIME= 22614 HRS I/P: 230VAC O/P:75%OAD Ta= 60 °C LIFE TIME= 43752 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 169.3K HRS | | | P |
| 3 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 60°C | | | P |

COMPONENT STRESS TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|--|---|--|--|---------|
| 1 | Power Transistor (D to S) or (C to E) Peak Voltage | Q 5 Rated STF25NM50N 22A/550V | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C | (1) 498 V (2) 452 V | P |
| 2 | Diode Peak Voltage | Q100 Rated IRFB3307 130A/75V | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C | (1) 64.4 V (2) 70 V | P |
| 3 | PFC Transistor (D to S) or (C to E) Peak Voltage | Q1 Rated STP21NM60N 17A/600V | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C | (1) 595 V (2) 478 V | P |
| 4 | Input Capacitor Voltage | C5 Rated 220u/450V 105°C HU | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C | (1) 424 V (2) 418 V (3) 424 V | P |
| 5 | Control IC Voltage Test | U900 Rated L6599D 16V (max) 8.85V (min) | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25°C | (1) 12.52 V (2) 10 V (3) 12.47 V | P |

| TEST RESULT | TESTER | APPROVAL |
|-------------|------------|---------------|
| PASS | SANFORD SU | VINCENT TSENG |

2003/12/12 A50-F023