

MODEL : RS-150-24

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|--|---------|
| 1 | RIPPLE & NOISE | V1: 120 mVp-p (Max) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | V1: 23 mVp-p (Max) | P |
| 2 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 22.8 V- 26.4 V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 21.94V- 27.67 V/ 230VAC 21.94V- 27.67 V/ 115VAC | P |
| 3 | OUTPUT VOLTAGE TOLERANCE | V1: -1 %- 1 % (Max) | I/P: 176 VAC / 264 VAC O/P:FULL/ 0 % LOAD Ta:25°C | V1: 0.03 %- -0.03 % | P |
| 4 | LINE REGULATION | V1:-0.5 %- 0.5 % (Max) | I/P: 176 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0 %- 0 % | P |
| 5 | LOAD REGULATION | V1: -0.5 %- 0.5 % (Max) | I/P:230 VAC O/P:FULL -MIN LOAD Ta:25°C | V1: 0.03 %- -0.03 % | P |
| 6 | SET UP TIME | 230 VAC/800 ms (Max) 115 VAC/1200 ms (Max) | I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 499 ms 115VAC/ 232 ms | P |
| 7 | RISE TIME | 230 VAC/20 ms (Max) 115 VAC/30 ms (Max) | I/P:230 VAC I/P:115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 4 ms 115VAC/ 4 ms | P |
| 8 | HOLD UP TIME | 230 VAC/ 20 ms(TYP) 115 VAC/ 10 ms(TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 34 ms 115VAC/ 30 ms | P |
| 9 | OVER/UNDERSHOOT TEST | < ±5% | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | TEST: < 5 % | P |
| 10 | DYNAMIC LOAD | V1: 2400 mVp-p | I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C | 444 mVp-p | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDCT |
|----|-----------------------|--------------------------------------|--|--|--------|
| 1 | INPUT VOLTAGE RANGE | 176VAC~ 264 VAC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 110 V~ 264 V | P |
| | | | I/P: LOW-LINE-3V= 173 V 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 | 47 HZ ~ 63 HZ NO DAMAGE OSC | I/P: 176 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 86 % (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 86.3 % | P |
| 4 | INPUT CURRENT | 230 V/ 2 A (TYP) 115 V/ 3 A (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 1.6 A/ 230 VAC I = 2.7 A/ 115 VAC | P |
| 5 | INRUSH CURRENT | 230 V/ 50 A(TYP) COLD START | I/P:230 VAC O/P:FULL LOAD Ta:25°C | I = 35 A/ 230 VAC | P |
| 6 | LEAKAGE CURRENT | < 2 mA / 240 VAC | I/P:254 VAC O/P:Min LOAD Ta:25°C | L-FG: 0.5 mA N-FG: 0.4 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|--|--|--|---------|
| 1 | OVER LOAD PROTECTION | 110 %~ 150 % | I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta:25°C | 120 %/ 230 VAC 119 %/ 115 VAC Hiccup Mode | P |
| 2 | OVER VOLTAGE PROTECTION | CH1: 27.6V~ 32.4 V | I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta:25°C | 31.8 V/ 230 VAC 31.8 V/ 115 VAC Hiccup Model | P |
| 3 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE | I/P: 264 VAC O/P: Full LOAD Ta:25°C | NO DAMAGE Hiccup Mode | P |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|---|---|------------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : RS-150-24 1. ROOM AMBIENT BURN-IN : 14 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 30.1 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230 VAC O/P: FULL LOAD Ta= 46.7 °C | | | P |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P: 230 VAC O/P: 117%LOAD Ta:25°C | TEST : OK | P |
| 3 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | I/P: 230 VAC O/P: 100% LOAD Ta= -25 °C | TEST : OK | P |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C NO DAMAGE | I/P: 272 VAC O/P:FULL LOAD Ta= 45 °C HUMIDITY= 95 %R.H | TEST : OK | P |
| 5 | TEMPERATURE COEFFICIENT | ± 0.03 %(0-50°C) | I/P: 230 VAC O/P:FULL LOAD | ± 0.01 %(0-50°C) | P |
| 6 | VIBRATION TEST | 1 Set Operating at I/P: 230 VAC NO LOAD (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:5G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25°C | | TEST : 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: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min | I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C | I/P-O/P: 4.48 mA I/P-FG: 3.65 mA O/P-FG: 3.1 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 | I/P-O/P: 4 G Ω I/P-FG: 4 G Ω O/P-FG: 6 G Ω NO DAMAGE | P |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 30 A / 2min Ta:25°C | 7 mΩ | P |
| 4 | APPROVAL | TUV: Certificate NO : R50046942 UL: File NO : E183223 | | | P |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|---|-------------------------------|---------|
| 1 | HARMONIC | EN61000-3-2 CLASS A | I/P: 230 VAC/50HZ O/P:FULL 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 | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|--|----------------|--------|---------|
| 1 | CAPACITOR LIFE CYCLE | SUPPOSE C 65 IS THE MOST CRITICAL COMPONENT I/P: 230 VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 304498 HRS I/P: 230 VAC O/P:FULL LOAD Ta= 45 °C LIFE TIME= 92438 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 244K HRS | | | P |

COMPONENT STRESS TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|--|------------------------------------|---|--------------------------------------|---------|
| 1 | Power Transistor (D to S) or (C to E) Peak Voltage | Q1 Rated 2SK2082 : 800V/ 9 A | I/P:High-Line +3V =267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C | (1) 548 V (2) 626 V (3) 684 V | P |
| 2 | Diode Peak Voltage | D60 Rated S20LC20U : 200V/ 20 A | I/P:High-Line +3V =267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C | (1) 116 V (2) 131 V (3) 117 V | P |
| 3 | Clamp Diode Peak Voltage | D1 Rated HER208 :1K V/ 2 A | I/P:High-Line +3V =267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25°C | (1) 606 V (2) 624 V | P |
| 4 | Input Capacitor Voltage | C5 Rated : 330u /200 V | 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) 184 V (2) 188 V (3) 188 V | P |
| 5 | Control IC Voltage Test | U1 Rated 1203 : 16 V | 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) 15.3 V (4) 15 V (5) 14.5 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|-----------|---------------------------|-------------|---------------|----------|
| 2004/3/19 | RD SAMPLE | PASS | VINCENT TSENG | MAX LIN |
| 2004/7/8 | PRODUCT SAMPLE A404B34 | PASS | VINCENT TSENG | MAX LIN |
| 2004/8/30 | PRODUCT SAMPLE A408B09 | PASS | VINCENT TSENG | MAX LIN |

2003/12/12 A50-F023