

MODEL : RPS-60-12

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|--|---------|
| 1 | RIPPLE & NOISE | V1: 60 mVp-p (Max) | I/P: 230VAC O/P:FULL LOAD Ta:25°C | V1: 46 mVp-p (Max) | P |
| 2 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 11.4V- 13.2V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 10.97 V- 13.52 V/ 230 VAC 10.97 V- 13.52 V/ 115 VAC | P |
| 3 | OUTPUT VOLTAGE TOLERANCE | V1: 2 %- -2 % (Max) | I/P: 115 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C | V1: 0.1 %- -0.1 % | P |
| 4 | LINE REGULATION | V1: 0.5 %- -0.5 % (Max) | I/P: 115VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0.05 %- -0.05 % | P |
| 5 | LOAD REGULATION | V1: 1%- -1 % (Max) | I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C | V1: 0.1 %- -0.1 % | P |
| 6 | SET UP TIME | 230VAC: 500 ms (Max) 115 VAC: 500 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 396 ms 115VAC/ 377 ms | P |
| 7 | RISE TIME | 230VAC: 30 ms (Max) 115VAC: 30 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 9 ms 115VAC/ 7 ms | P |
| 8 | HOLD UP TIME | 230VAC: 60 ms (TYP) 115VAC: 12 ms (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 71 ms 115VAC/ 14.13 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: 1200 mVp-p | I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C | 250 mVp-p | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|---|--|---|---------|
| 1 | INPUT VOLTAGE RANGE | 90VAC~264 VAC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 68 V~264V | P |
| | | | I/P: LOW-LINE-3V= 87 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 | 47HZ ~63 HZ NO DAMAGE OSC | I/P: 90VAC ~ 264 VAC O/P:FULL -MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 83% (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 83.4 % | P |
| 4 | INPUT CURRENT | 230V/ 1 A (TYP) 115V/ 1.8 A (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 0.7 A/ 230 VAC I = 1.11 A/ 115 VAC 1 | P |
| 5 | INRUSH CURRENT | 230V/ 60 A (TYP) 115V/ 30 A(TYP) COLD START | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 51 A/ 230 VAC I = 26 A/ 115 VAC | P |
| 6 | LEAKAGE CURRENT | < 130 uA/ 264 VAC for earth leakage current | I/P: 264 VAC O/P:Min LOAD Ta:25°C | L-FG: 117 uA N-FG: 117 uA | P |
| | | < 100 uA/264 VAC for touch leakage current | I/P: 264 VAC O/P:Min LOAD Ta:25°C | L-V+ : 79 uA L-V-: 79 uA N-V+: 79 uA N-V-: 79 uA | |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|--|---|---|---------|
| 1 | OVER LOAD PROTECTION | 115 %- 150 % | I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25°C | 136 %/ 230 VAC 139 %/ 115 VAC Hiccup Mode | P |
| 2 | OVER VOLTAGE PROTECTION | CH1: 13.8 V~ 16.2 V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 15.17 V/ 230 VAC 15.17 V/ 115 VAC Shunt down Re- power ON | 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 |

ONTROL FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---------------------------|---------------|-----------------------------|--------------|---------|
| 1 | No load power consumption | <0.75W | I/P: 240 VAC O/P:NO LOAD | 0.44W/240VAC | P |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|--|------------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : RPS-60-12 1. ROOM AMBIENT BURN-IN : 2HRS I/P: 230VAC O/P: FULL LOAD Ta= 34.5 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 48.8 °C | | | P |
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| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P: 230 VAC O/P: 125 % 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= -20°C | TEST : OK | P |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE | I/P: 272 VAC O/P:FULL LOAD Ta= 50°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 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10-500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (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: 4 KVAC/min I/P-FG: 2 KVAC/min O/P-FG: 1.5 KVAC/min | I/P-O/P: 4.2 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C | I/P-O/P: 2.14 mA I/P-FG: 1.54 mA O/P-FG: 1.57 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: 30 GΩ I/P-FG: 30 GΩ O/P-FG: 30 GΩ NO DAMAGE | P |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40 A / 2min Ta:25°C | 8 mΩ | P |
| 4 | APPROVAL | TUV: Certificate NO : R 50112371 UL: File NO : E227340 | | | 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 | EN55011 (CISPR11) CLASS B | I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C | PASS Test by certified Lab | P |
| 3 | RADIATION | EN55011 (CISPR11) 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 AIR:15KV / Contact:8KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 5 | E.F.T | EN61000-4-4 INPUT: 2KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 6 | SURGE | IEC61000-4-5 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 | SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 122610 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 26651 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 353.6K HRS | | | P |
| 3 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure : Above 30,000 hours @ TA 50°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 | Q1 Rated K2545 : 600V 6A | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C | (1) 558 V (2) 592 V | P |
| 2 | Diode Peak Voltage | D100 Rated 20CTQ150 : 150V 20A | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C | (1) 117 V (2) 116 V | P |
| 3 | Clamp Diode Peak Voltage | D1 Rated EGP20J : 600V 2A | I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C | (1) 464 V | P |
| 4 | Input Capacitor Voltage | C5 Rated :100u / 400V/ 105°C | 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) 370 V (2) 374 V (3) 370 V | P |
| 5 | Control IC Voltage Test | U1 Rated 1230D : 18 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) 15.2 V (2) 13.4 V (3) 15.2 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|-----------|----------------------------|-------------|---------------|----------|
| 2006/4/3 | RD SAMPLE | PASS | VINCENT TSENG | MAX LIN |
| 2006/6/2 | PRODUCT SAMPLE W0605A17 | PASS | VINCENT TSENG | MAX LIN |
| 2006/7/20 | PRODUCT SAMPLE W0607A12 | PASS | VINCENT TSENG | MAX LIN |

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