

MODEL : SE-1000-48

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|--|---------|
| 1 | RIPPLE & NOISE | V1: 200 mVp-p (Max) | I/P: 230VAC O/P:FULL LOAD Ta:25°C | V1: 67 mVp-p (Max) | P |
| 2 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 43V~ 56V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 40.69 V~ 58.97 V/ 230 VAC 40.69 V~ 58.97 V/ 115 VAC | P |
| 3 | OUTPUT VOLTAGE TOLERANCE | V1: 1 %~ -1 % (Max) | I/P: 200 VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C | V1: 0.03 %~ -0.03 % | P |
| 4 | LINE REGULATION | V1: 0.5 %~ -0.5 % (Max) | I/P: 200VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0.02 %~ -0.02 % | P |
| 5 | LOAD REGULATION | V1: 0.5 %~ -0.5 % (Max) | I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C | V1: 0.02 %~ -0.02 % | P |
| 6 | SET UP TIME | 230VAC: 1500 ms (Max) 115 VAC: 1500 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 134 ms 115VAC/ 131 ms | P |
| 7 | RISE TIME | 230VAC: 50 ms (Max) 115VAC: 50 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 26 ms 115VAC/ 26 ms | P |
| 8 | HOLD UP TIME | 230VAC: 20 ms (TYP) 115VAC: 15 ms (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 24 ms 115VAC/ 19.1 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: 4800 mVp-p | I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C | 422 mVp-p | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|---|---|--|---------|
| 1 | INPUT VOLTAGE RANGE | 180VAC~264 VAC) | I/P:TESTING O/P:FULL LOAD Ta:25°C | 137 V~264V | P |
| | | | I/P: LOW-LINE-3V= 177 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: 180VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 89% (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 90.6 % | P |
| 4 | INPUT CURRENT | 230V/ 10 A (TYP) 115V/ 17.5 A(TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 9.54 A/ 230 VAC I = 16.1 A/ 115 VAC | P |
| 5 | INRUSH CURRENT | 230V/ 55 A (TYP) 115V/ 35 A(TYP) COLD START | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 52 A/ 230 VAC I = 28 A/ 115 VAC | P |
| 6 | LEAKAGE CURRENT | < 2.5 mA / 240 VAC | I/P: 254 VAC O/P:Min LOAD Ta:25°C | L-FG: 1.4 mA N-FG: 1.4 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|---|---------|
| 1 | OVER LOAD PROTECTION | 105 %~ 125 % | I/P: 230 VAC I/P: 115 VAC O/P: TESTING Ta: 25°C | 114 %/ 230 VAC 113 %/ 115 VAC Shunt down Re-power ON | P |
| 2 | OVER VOLTAGE PROTECTION | CH1: 57.6 V~ 67.2 V | I/P: 230 VAC I/P: 115 VAC O/P: MIN LOAD Ta: 25°C | 61.8 V/ 230 VAC 61.8 V/ 115 VAC Shunt down Re- power ON | P |
| 3 | OVER TEMPERATURE PROTECTION | SPEC: TSW1: 70°C ± 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 Shunt down Re-power ON | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------|--|--|--|---------|
| 1 | FAN LOCK TEST | POWER SUPPLY SHUT DOWN | I/P: 230 VAC O/P: FULL LOAD | OK | P |
| 2 | FAN SPEED CONTROL | ----- | I/P: 230 VAC O/P: FULL LOAD Ta: 25°C | Fan Voltage= 12.47 V | P |
| 3 | REMOTE CONTROL | Rc+ / Rc- 0V~ 0.8V POWER ON 4V~10V POWER OFF | I/P: 230 VAC O/P: FULL LOAD Ta: 25°C | 0V ~ 2V POWER ON 2.1V ~ 10V POWER OFF | P |
| 4 | DC OK SIGNAL | POWER ON: 3.3V~5.6V POWER OFF: 0V~1V | I/P: 230 VAC O/P: FULL LOAD/NO LOAD Ta: 25°C | POWER ON: 5.2 V POWER OFF: 0 V | P |
| 5 | REMOTE SENSE | >0.3V | I/P: 230 VAC O/P: FULL LOAD Ta: 25°C | >0.3V | P |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|---|------------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : SE-1000-48 1. ROOM AMBIENT BURN-IN : 1.5HRS I/P: 230VAC O/P: FULL LOAD Ta= 35.5 °C 2. HIGH AMBIENT BURN-IN : 1.5 HRS I/P: 230VAC O/P: FULL LOAD Ta= 49.8 °C | | | P |
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| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P: 230 VAC O/P: 112% 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 | ± 0.05 %(0~50°C) | I/P: 230 VAC O/P:FULL LOAD | ± 0.02 %(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 |

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= 1212850 HRS I/P: 230VAC O/P:FULL LOAD Ta= 50 °C LIFE TIME= 221954 HRS | | | P |
| 2 | MTBF | Conducted by Parts Stress Analysis Prediction 1273.6K hrs min. Telcordia SR-332 (Bellcore) ; 251.6K hrs. MIL-HDBK-217F (25°C) | | | 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: 10.61 mA I/P-FG: 8.96 mA O/P-FG: 7.94 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: 3 GΩ I/P-FG: 1 GΩ O/P-FG: 13 GΩ NO DAMAGE | P |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40 A / 2min Ta:25°C | 10 mΩ | P |
| 4 | APPROVAL | TUV: Certificate NO : ---- UL: File NO : E183223 | | | 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 IRGP35B60PD : 600V 35 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) 454 V (2) 382 V (3) 460 V | P |
| 2 | Diode Peak Voltage | D100 Rated PA90504 : 400V 20A | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25°C | (1) 362 V (2) 362 V (3) 374 V | P |
| 3 | Input Capacitor Voltage | C5 Rated :1500u / 200V/ 85°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 (4)Burn in 1hour Ta:25°C | (1) 180 V (2) 190 V (3) 180 V (4) 180 V | P |
| 4 | Control IC Voltage Test | U2 Rated SG3525AN : 40 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) 15.7 V (2) 15.6 V (3) 15.6 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|------------|----------------------------|-------------|---------------|----------|
| 2005/12/21 | RD SAMPLE | PASS | VINCENT TSENG | MAX LIN |
| 2006/3/9 | PRODUCT SAMPLE W0601B20 | PASS | VINCENT TSENG | MAX LIN |
| 2006/5/11 | PRODUCT SAMPLE W0604B22 | PASS | VINCENT TSENG | MAX LIN |

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