

MODEL : LPV-35-5

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|--------------------------|---|---|----------------------------------|---------|
| 1 | RIPPLE & NOISE | V1:80 mVp-p (Max) | I/P: 230VAC O/P:FULL LOAD Ta:25°C | V1: 14 mVp-p (Max) | P |
| 2 | OUTPUT VOLTAGE TOLERANCE | V1: 6 %- -6 % (Max) | I/P: 100VAC / 264 VAC O/P:FULL/ MIN LOAD Ta:25°C | V1: 1.5 %- -1.5 % | P |
| 3 | LINE REGULATION | V1: 1 %- -1 % (Max) | I/P: 100 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0 %- 0 % | P |
| 4 | LOAD REGULATION | V1: 4 %- -4 % (Max) | I/P: 230 VAC O/P:FULL -MIN LOAD Ta:25°C | V1: 1.5 %- -1.5 % | P |
| 5 | 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/ 153 ms 115VAC/ 153 ms | P |
| 6 | RISE TIME | 230VAC: 20 ms (Max) 115VAC: 20 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 6.5 ms 115VAC/ 6 ms | P |
| 7 | HOLD UP TIME | 230VAC: 50 ms (TYP) 115VAC: 16 ms (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230VAC/ 129 ms 115VAC/ 27 ms | P |
| 8 | OVER/UNDERSHOOT TEST | < ±5% | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | TEST: <5 % | P |
| 9 | DYNAMIC LOAD | V1: 1000 mVp-p | I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25°C | 186 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 | 55 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: 100VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 77 % (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 78.6 % | P |
| 4 | INPUT CURRENT | 230V/ 0.7 A (TYP) 115V/ 1.1 A (TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 0.3 A/ 230 VAC I = 0.58 A/ 115 VAC | P |
| 5 | INRUSH CURRENT | 230V/ 55 A (TYP) 115V/ 30 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 = 26 A/ 115 VAC | P |
| 6 | LEAKAGE CURRENT | < 0.25 mA / 240 VAC | I/P: 264VAC O/P:Min LOAD Ta:25°C | L-FG: 0.01 mA N-FG 0.01 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 | 139 %/ 230 VAC 134 %/ 115 VAC Hiccup Mode | P |
| 2 | OVER VOLTAGE PROTECTION | CH1: 5.75 V~ 6.75 V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 6.42 V/ 230 VAC 6.43 V/ 115 VAC Shut 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 |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|---|-------------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : LPV-35-12 1. ROOM AMBIENT BURN-IN : 2.5 HRS I/P: 230VAC O/P: FULL LOAD Ta=28.4 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P: 230VAC O/P: FULL LOAD Ta=67.2 °C | | | P |
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| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P: 230 VAC O/P:127 % LOAD Ta:32.9°C | TEST : OK | P |
| 3 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | I/P: 230 VAC O/P:100 % LOAD Ta=-35 °C | TEST : OK | P |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 65°C NO DAMAGE | I/P: 272 VAC O/P:FULL LOAD Ta= 65 °C HUMIDITY= 95 %R.H | TEST : OK | P |
| 5 | TEMPERATURE COEFFICIENT | ± 0.03 %(0-50°C) | I/P: 230 VAC O/P:FULL LOAD | ± 0.006 %(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: 3 KVAC/min | I/P-O/P: 3.6 KVAC/min | I/P-O/P: 1.943 mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ | I/P-O/P: 500 VDC Ta:25°C / 70%RH | I/P-O/P: 12 GΩ NO DAMAGE | P |
| 3 | APPROVAL | TUV: Certificate NO : UL: File NO : | | | N |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|--|--|-------------------------------|---------|
| 1 | HARMONIC | EN61000-3-2 CLASS A CLASS C | 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)/115V(60HZ) O/P:FULL/50% LOAD Ta:25°C | PASS Test by certified Lab | P |
| 3 | RADIATION | EN55022 CLASS B | I/P: 230 VAC (50HZ) /115(60HZ) O/P:FULL LOAD Ta:25°C | PASS Test by certified Lab | P |
| 4 | E.S.D | EN61000-4-2 LIGHT 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 LIGHT INDUSTRY INPUT: 1KV | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 6 | SURGE | IEC61000-4-5 LIGHT INDUSTRY L-N :1KV | 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 | LPV-35-12 : SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta=25 °C LIFE TIME=127297 HRS I/P: 230VAC O/P:FULL LOAD Ta=65 °C LIFE TIME=12309 HRS I/P: 230VAC O/P:75% LOAD Ta=65 °C LIFE TIME=20565 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 743.5 KHRS | | | P |
| 3 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure(Expected Life) : 20,000 hours @ Tcase 80°C ; 50,000 hours @ Tcase 65°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 STF6NM60N :600 V/ 4.6A | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Output Short Ta:25°C | (1) 580 V (2) 586 V | P |
| 2 | Diode Peak Voltage | D100Rated MBR1545CT : 15A/45V | I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2)Output Short Ta:25°C | (1) 41 V (2) 33 V | P |
| 3 | Clamp Diode Peak Voltage | D1 Rated EGP20J : 2A/600V | I/P:High-Line +3V = 267 V O/P: (1) Dynamic Load 90%Duty/1KHz Ta:25°C | (1) 544 V | P |
| 4 | Input Capacitor Voltage | C5 Rated 120u/400V 105°C KMG | 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) 377 V (2) 378 V (3) 378 V | P |
| 5 | Control IC Voltage Test | U1 NCP1230/ 18V | 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) 10.90 V (2) 9.191 V (3) 10.92 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|-----------|----------------------------|-------------|------------|---------------|
| 2008/5/5 | RD SAMPLE | PASS | SANFORD SU | VINCENT TSENG |
| 2008/9/4 | PRODUCT SAMPLE W0806C09 | PASS | SANFORD SU | VINCENT TSENG |
| 2008/9/16 | PRODUCT SAMPLE W0808D12 | PASS | SANFORD SU | VINCENT TSENG |

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