

MODEL: LPS-50-5

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|--|---|--|---------|
| 1 | RIPPLE & NOISE | V1: 50 mVp-p (Max) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | V1: 9 mVp-p (Max) | P |
| 2 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 4.5V~ 5.5 V | I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25°C | 4.363V~5.672 V/230VAC 4.363V~ 5.672V/115VAC | P |
| 3 | OUTPUT VOLTAGE TOLERANCE | V1: -3%~ 3% (Max) | I/P: 90 VAC / 264 VAC O/P:FULL/ 0% LOAD Ta:25°C | V1: 0.06%~-0.06 % | P |
| 4 | LINE REGULATION | V1: -1%~ 1% (Max) | I/P: 90 VAC ~ 264 VAC O/P:FULL LOAD Ta:25°C | V1: 0%~ 0% | P |
| 5 | LOAD REGULATION | V1: -3%~ 3% (Max) | I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25°C | V1: 0%~ 0.2% | P |
| 6 | SET UP TIME | 230 VAC/ 100 ms (Max) 115 VAC/ 100 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230 VAC/ 7 ms 115 VAC/ 5.2 ms | P |
| 7 | RISE TIME | 230 VAC/ 40 ms (Max) 115 VAC/ 40 ms (Max) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230 VAC/ 2.7 ms 115 VAC/ 2.3 ms | P |
| 8 | HOLD UP TIME | 230VAC/ 50 ms(TYP) 115VAC/ 12 ms(TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | 230 VAC/ 78 ms 115 VAC/ 15 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 | 300 mVp-p | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|---|---|--|---------|
| 1 | INPUT VOLTAGE RANGE | 90 VAC~ 264 VAC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 59V~ 264 V | 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 | 47 HZ ~ 63 HZ NO DAMAGE OSC | I/P: 90 VAC ~ 264 VAC O/P:FULL-MIN LOAD Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 81 % (TYP) | I/P: 230 VAC O/P:FULL LOAD Ta:25°C | 82.3 % | P |
| 4 | INPUT CURRENT | 230 V/ 0.8 A(TYP) 115 V/ 1.2 A(TYP) | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 0.582 A / 230 VAC I = 0.94 A / 115VAC | P |
| 5 | INRUSH CURRENT | 230 V/ 35 A(TYP) 115 V/ 25 A (TYP) COLD START | I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25°C | I = 32.3 A/ 230 VAC I = 18 A/ 115 VAC | P |
| 6 | LEAKAGE CURRENT | < 1 mA / 240 VAC | I/P: 254 VAC O/P:Min LOAD Ta:25°C | L-FG: 0.64 mA N-FG: 0.64 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|--|--|--|---------|
| 1 | OVER LOAD PROTECTION | 122 %~ 160 % | I/P: 230 VAC I/P: 115VAC O/P: TESTING Ta:25°C | 135%/230VA 134%/115VAC 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 | 6.02V/230VAC 6.02V/115VAC Hiccup Model | P |
| 3 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE | I/P: 267 VAC O/P: Full LOAD Ta:25°C | NO DAMAGE Hiccup Mode | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------|---|---|--|---------|
| 1 | REMOTE CONTROL | Rc+ / Rc- 0 V~ 0.8 V POWER ON 4 V~ 10 V POWER OFF | I/P: 230 VAC O/P: FULL LOAD Ta:25°C | 0V ~ 3 V POWER ON 3.5V ~ 10 V POWER OFF | P |

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|---|--|-----------------|---------|
| 1 | TEMPERATURE RISE TEST | MODEL : LPS-50-5V 1. ROOM AMBIENT BURN-IN : 1 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 27 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P: 230 VAC O/P: 100% LOAD Ta= 53.2 °C | | | P |
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| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P: 230 VAC O/P: 146% 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 | ± 0.04 % (0-50°C) | I/P: 230 VAC O/P: FULL LOAD | 0.01 % (0-50°C) | P |
| 6 | VIBRATION TEST | 1 Carton & 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: 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-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: 3.61 mA I/P-FG: 3.88 mA O/P-FG: 1.87 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: 30G Ω I/P-FG: 20G Ω O/P-FG: 18G Ω NO DAMAGE | P |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40 A / 2min Ta:25°C | 16 mΩ | P |
| 4 | APPROVAL | TUV: Certificate NO : R50033909 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 52 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta=25°C LIFE TIME= 119659 HRS I/P:230VAC O/P:FULL LOAD Ta=50°C LIFE TIME= 28706 HRS | | | P |
| 2 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 341.7K 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 | Q 1 Rated K2645: 600 V 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) 494 V (2) 502 V (3) 502 V | P |
| 2 | Diode Peak Voltage | D51 Rated D15SCA4M-40V : 40 V 15 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) 29.4 V (2) 33.8 V (3) 30.2 V | P |
| 3 | Clamp Diode Peak Voltage | D1 Rated EGP20J : 600 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) 502 V (2) 502 V | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|------------|---------------------------|-------------|---------------|----------|
| 2003/9/24 | RD SAMPLE | PASS | VINCENT TSENG | MAX LIN |
| 2003/11/21 | PRODUCT SAMPLE A310B03 | PASS | VINCENT TSENG | MAX LIN |
| 2004/3/12 | PRODUCT SAMPLE A402B03 | PASS | VINCENT TSENG | MAX LIN |

2003/12/12 A50-F023