



Test Report: LPF-40D-20

40W Single Output Switching Power Supply

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST
OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|--------------------------|--|---|--|---------|
| 1 | RIPPLE & NOISE | V1 : 150 mVp-p (Max) | I/P : 230VAC O/P : FULL LOAD Ta : 25°C | V1 : 14.6 mVp-p (Max) | P |
| 2 | CONSTANT CURRENT REGION | V1= 12V ~ 20V | I/P : 230VAC O/P : CV MODE Ta : 25°C | O/P= 12V : 2.1 A O/P= 19V : 2.104 A | P |
| 3 | OUTPUT VOLTAGE TOLERANCE | V1 : 4 %~ -4 % (Max) | I/P : 100 VAC / 305 VAC O/P : FULL/ MIN LOAD Ta : 25°C | V1 : 0.2 %~ -0.2 % | P |
| 4 | LINE REGULATION | V1 : 0.5 %~ -0.5 % (Max) | I/P : 100 VAC ~ 305 VAC O/P : FULL LOAD Ta : 25°C | V1 : 0 %~ 0 % | P |
| 5 | LOAD REGULATION | V1 : 1 %~ -1 % (Max) | I/P : 230 VAC O/P : FULL ~MIN LOAD Ta : 25°C | V1 : 0.2 %~ -0.2 % | P |
| 6 | SET UP TIME | 230VAC : 500 ms (Max) 115VAC : 1000 ms(Max) | I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C | 230VAC/ 274 ms 115VAC/ 350 ms | P |
| 7 | RISE TIME | 230VAC : 80 ms (Max) 115VAC : 80 ms (Max) | I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C | 230VAC/ 16 ms 115VAC/ 16 ms | P |
| 8 | HOLD UP TIME | 230VAC : 16 ms (TYP) 115VAC : 16 ms (TYP) | I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C | 230VAC/ 72 ms 115VAC/ 38 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 : 2000 mVp-p | I/P : 230 VAC (1).O/P : FULL /Min LOAD 90%DUTY/ 1KHZ (2).O/P : FULL /Min LOAD 50%DUTY/ 120HZ Ta : 25°C | (1)248 mVp-p (2)378 mVp-p | P |

| | | | | | | | | | | | | |
|--|------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|
| 11 | DIMMER TEST | SPEC: | | | | | | | | | | |
| | | *Output constant current level can be adjusted through output cable by 1 ~ 10Vdc, PWM signal or resistor between ADJ1(+) and ADJ2(-). | | | | | | | | | | |
| | | *Reference resistance value for output current adjustment (Typical) | | | | | | | | | | |
| | | Resistance value | 10K | 20K | 30K | 40K | 50K | 60K | 70K | 80K | 90K | 100K |
| | | Output current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| | | *1 ~ 10V dimming function for output current adjustment (Typical) | | | | | | | | | | |
| | | Dimming value | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V |
| | | Output current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| | | *10V PWM signal for output current adjustment (Typical) | | | | | | | | | | |
| | | Duty value | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| | | Output current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| TEST RESULT: I/P : 230 VAC ; Ta : 25°C | | | | | | | | | | | | |
| 1 | Resistance value | 10K | 20K | 30K | 40K | 50K | 60K | 70K | 80K | 90K | 100K | |
| | Output current | 0.210A | 0.409A | 0.612A | 0.816A | 1.015A | 1.217A | 1.411A | 1.609A | 1.827A | 2.015A | |
| | % | 10.50% | 20.45% | 30.60% | 40.80% | 50.75% | 60.85% | 70.55% | 80.45% | 91.35% | 100.75% | |
| 2 | Dimming value | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | |
| | Output current | 0.220A | 0.418A | 0.624A | 0.826A | 1.044A | 1.238A | 1.448A | 1.657A | 1.856A | 2.017A | |
| | % | 11.00% | 20.90% | 31.20% | 41.30% | 52.20% | 61.90% | 72.40% | 82.85% | 92.80% | 100.85% | |
| 3 | Duty value | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | |
| | Output current | 0.164A | 0.376A | 0.587A | 0.798A | 1.010A | 1.223A | 1.435A | 1.648A | 1.861A | 2.007A | |
| | % | 8.20% | 18.80% | 29.35% | 39.90% | 50.50% | 61.15% | 71.75% | 82.40% | 93.05% | 100.35% | |

P

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|---|---|---|---------|
| 1 | INPUT VOLTAGE RANGE | 100VAC~305 VAC | I/P : TESTING O/P : FULL LOAD Ta : 25°C I/P : LOW-LINE-3V=97 V HIGH-LINE=305 V O/P : FULL/MIN LOAD ON : 30 Sec . OFF : 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE) | 70 V~305V TEST : OK | P |
| 2 | INPUT FREQUENCY RANGE | 47HZ ~63 HZ NO DAMAGE OSC | I/P : 100 VAC ~ 305 VAC O/P : FULL~MIN LOAD Ta : 25°C | TEST : OK | P |
| 3 | POWER FACTOR | 0.95 / 230 VAC(TYP) 0.98 / 115 VAC(TYP) 0.92 / 277 VAC(TYP) | I/P : 230 VAC I/P : 115 VAC I/P : 277VAC O/P : FULL LOAD Ta : 25°C | PF= 0.9738 / 100% PF= 0.9958 / 100% PF= 0.93 / 100% | P |
| 4 | EFFICIENCY | 86% (TYP) | I/P : 230 VAC O/P : FULL LOAD Ta : 25°C | 89.59 % | P |
| 5 | INPUT CURRENT | 230V/ 0.4 A (TYP) 115V/ 0.8 A (TYP) | I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C | I= 0.19 A/ 230 VAC I= 0.39 A/ 115 VAC | P |
| 6 | INRUSH CURRENT | 230V/ 50 A (TYP) COLD START | I/P : 230 VAC O/P : FULL LOAD Ta : 25°C | I= 45 A/ 230 VAC | P |
| 7 | LEAKAGE CURRENT | < 0.75 mA / 240 VAC | I/P : 277 VAC O/P : Min LOAD Ta : 25°C | L-CASE : 0.01 mA N-CASE : 0.01 mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|---|---|---|---------|
| 1 | OVER LOAD PROTECTION | 95 % ~ 108 % | I/P : 230 VAC I/P : 115 VAC O/P : TESTING Ta : 25°C | 104.6 %/ 230 VAC 104.6 %/ 115 VAC Constant Current Limiting ,recovers automatically after fault condition is removed. | P |
| 2 | OVER VOLTAGE PROTECTION | CH1 : 23 V ~ 27 V | I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C | 24.509 V/ 230 VAC 24.709 V/ 115 VAC Shut down and latch off o/p voltage, re-power on to recover | P |
| 3 | OVER TEMPERATURE PROTECTION | SPEC : RTH2 : 90± 10°C O.T.P. NO DAMAGE | I/P : 230 VAC O/P : FULL LOAD | O.T.P. Active Shut down o/p voltage, re-power on to recover | P |
| 4 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE | I/P : 305 VAC O/P : FULL LOAD Ta : 25°C | NO DAMAGE Hiccup mode, recovers automatically after fault condition is removed. | P |

COMPONENT STRESS TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|--|--|---|--|---------|
| 1 | Power Transistor (D to S) or (C to E) Peak Voltage | Q 3 Rated : STP9NK70ZFP 7.5A/700V | I/P : High-Line +3V = 308 V O/P : (1)Full Load Turn on (2) Output Short (3)Full load continue Ta : 25°C | (1) 636 V (2) 484 V (3) 620 V | P |
| 2 | Diode Peak Voltage | D101 Rated : STPS20H100CT 20A/100V | I/P : High-Line +3V = 308 V O/P : (1)Full Load Turn on (2)Output Short (3)Full load continue Ta : 25°C | (1) 97.2 V (2) 91.2 V (3) 96 V | P |
| 3 | Input Capacitor Voltage | C5 Rated : 33u/450V 105°C 16*20 KXJ | I/P : High-Line +3V = 308 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) 429.51 V (2) 418.54 V (3) 417.58 V | P |
| 4 | Control IC Voltage Test | U 1 Rated : PFC FAN6921MR 17V~30V | I/P : High-Line +3V = 308 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) 21.635 V (2) 20.625 V (3) 20.619 V | P |
| 5 | Power Transistor (D to S) or (C to E) Peak Voltage | Q1 Rated : NDF10N60ZG 10A/600V | I/P : High-Line +3V = 308 V O/P : (1)Full Load Turn on (2) Output Short (3)Full load continue Ta : 25°C | (1) 470 V (2) 448 V (3) 464 V | P |

SAFETY & E.M.C. TEST
SAFETY TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|--|--------------------------------------|-------------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P : 3.75 KVAC/min | I/P-O/P : 4 KVAC/min Ta : 25°C | I/P-O/P : 2.474 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 : 30 GΩ NO DAMAGE | P |
| 3 | APPROVAL | TUV : Certificate NO : UL : File NO : | | | N/A |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT |
|----|---|---------------------------------------|---|-------------------------------|---------|
| 1 | HARMONIC | EN61000-3-2 CLASS C | I/P:230VAC/240VAC/220VAC50HZ O/P:100%,75%,60%LOAD CLASS C \geq 60% Ta:25°C | PASS | P |
| 2 | CONDUCTION | EN55015 CLASS B | I/P: 230 VAC (50HZ)/115V[60HZ] O/P:FULL/60% LOAD Ta:25°C | PASS Test by certified Lab | P |
| 3 | RADIATION | EN55015 CLASS B | I/P: 230 VAC (50HZ)/115V[60HZ] O/P:FULL LOAD Ta:25°C | PASS Test by certified Lab | P |
| 4 | E.S.D | AIR:8KV / Contact:6KV INDUSTRY | 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 | I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C | CRITERIA A | P |
| 7 | Test by certified Lab & Test Report Prepare | | | | |

RELIABILITY TEST
ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | VERDICT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|---|---|--|-----------------------------|----------|-----|--------------------------|-----------------------------|---|-----|-----------------------|--------|--------|---|----|--------|--------|--------|---|-----|-------------------------|--------|--------|---|----|-------|--------|--------|---|----|----------------------------|--------|--------|---|----|----------------------|--------|--------|---|----|------------------------------|--------|--------|---|-----|-------------------------|--------|--------|---|----|---------------|--------|--------|----|------|---------------------------|--------|--------|----|------|------------------------------------|--------|--------|----|----|--------------------------|--------|--------|----|------|---------------------------|--------|--------|----|------|--------------------------|--------|--------|----|------|---------------------------|--------|--------|----|-------|----------|--------|--------|----|----|----------------------|--------|--------|----|-----|-----------|--------|--------|----|----|--------|--------|--------|--|--|
| 1 | TEMPERATURE RISE TEST | MODEL : LPF-40-12 1. ROOM AMBIENT BURN-IN : 2.5 HRS I/P : 230VAC O/P : 95% LOAD Ta=29 °C 2. HIGH AMBIENT BURN-IN : 3.5 HRS I/P : 230VAC O/P : 95% LOAD Ta=50.4 °C | | | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT Ta=29 °C</th> <th>HIGH AMBIENT Ta= 50.4 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>C11</td><td>474/450V 10% P=10 MEX</td><td>45.3°C</td><td>63.4°C</td></tr> <tr><td>2</td><td>L3</td><td>TF2221</td><td>46.3°C</td><td>64.3°C</td></tr> <tr><td>3</td><td>BD1</td><td>4A/800V SILICON UR4KB80</td><td>43.8°C</td><td>62.0°C</td></tr> <tr><td>4</td><td>L1</td><td>TR991</td><td>44.9°C</td><td>62.9°C</td></tr> <tr><td>5</td><td>Q1</td><td>NDF10N60ZG 10A/600V TO220F</td><td>48.8°C</td><td>66.8°C</td></tr> <tr><td>6</td><td>D2</td><td>2A/800V GP20K T-52mm</td><td>59.3°C</td><td>77.4°C</td></tr> <tr><td>7</td><td>Q3</td><td>STP9NK70ZFP 7.5A/700V TO220F</td><td>57.6°C</td><td>75.5°C</td></tr> <tr><td>8</td><td>C16</td><td>22u/50V UL10Kh 5*11 YXM</td><td>53.6°C</td><td>71.1°C</td></tr> <tr><td>9</td><td>U1</td><td>FAN6921MR SOP</td><td>56.7°C</td><td>74.8°C</td></tr> <tr><td>10</td><td>C201</td><td>47u/50V UL10Kh 6.3*11 YXM</td><td>55.4°C</td><td>72.8°C</td></tr> <tr><td>11</td><td>RTH2</td><td>NTC 100KΩ 3Φ TTC3A104F4193EY 1%</td><td>50.5°C</td><td>68.3°C</td></tr> <tr><td>12</td><td>C5</td><td>33u/450V 105°C 16*20 KXJ</td><td>50.6°C</td><td>68.2°C</td></tr> <tr><td>13</td><td>C105</td><td>820u/25V UL10Kh 10*20 ZLH</td><td>57.2°C</td><td>74.9°C</td></tr> <tr><td>14</td><td>D101</td><td>PFR30L60CT 30A/60V TO220</td><td>59.4°C</td><td>77.1°C</td></tr> <tr><td>15</td><td>C111</td><td>330u/25V UL8Kh 8*11.5 ZLH</td><td>54.2°C</td><td>72.0°C</td></tr> <tr><td>16</td><td>LF100</td><td>TR895-R2</td><td>53.8°C</td><td>71.9°C</td></tr> <tr><td>17</td><td>D3</td><td>2A/800V GP20K T-52mm</td><td>50.1°C</td><td>67.9°C</td></tr> <tr><td>18</td><td>LF1</td><td>TR732A-R1</td><td>35.7°C</td><td>54.5°C</td></tr> <tr><td>19</td><td>T1</td><td>TF2203</td><td>58.2°C</td><td>75.2°C</td></tr> </tbody> </table> | NO | Position | | P/N | ROOM AMBIENT Ta=29 °C | HIGH AMBIENT Ta= 50.4 °C | 1 | C11 | 474/450V 10% P=10 MEX | 45.3°C | 63.4°C | 2 | L3 | TF2221 | 46.3°C | 64.3°C | 3 | BD1 | 4A/800V SILICON UR4KB80 | 43.8°C | 62.0°C | 4 | L1 | TR991 | 44.9°C | 62.9°C | 5 | Q1 | NDF10N60ZG 10A/600V TO220F | 48.8°C | 66.8°C | 6 | D2 | 2A/800V GP20K T-52mm | 59.3°C | 77.4°C | 7 | Q3 | STP9NK70ZFP 7.5A/700V TO220F | 57.6°C | 75.5°C | 8 | C16 | 22u/50V UL10Kh 5*11 YXM | 53.6°C | 71.1°C | 9 | U1 | FAN6921MR SOP | 56.7°C | 74.8°C | 10 | C201 | 47u/50V UL10Kh 6.3*11 YXM | 55.4°C | 72.8°C | 11 | RTH2 | NTC 100KΩ 3Φ TTC3A104F4193EY 1% | 50.5°C | 68.3°C | 12 | C5 | 33u/450V 105°C 16*20 KXJ | 50.6°C | 68.2°C | 13 | C105 | 820u/25V UL10Kh 10*20 ZLH | 57.2°C | 74.9°C | 14 | D101 | PFR30L60CT 30A/60V TO220 | 59.4°C | 77.1°C | 15 | C111 | 330u/25V UL8Kh 8*11.5 ZLH | 54.2°C | 72.0°C | 16 | LF100 | TR895-R2 | 53.8°C | 71.9°C | 17 | D3 | 2A/800V GP20K T-52mm | 50.1°C | 67.9°C | 18 | LF1 | TR732A-R1 | 35.7°C | 54.5°C | 19 | T1 | TF2203 | 58.2°C | 75.2°C | | |
| NO | Position | P/N | ROOM AMBIENT Ta=29 °C | HIGH AMBIENT Ta= 50.4 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | C11 | 474/450V 10% P=10 MEX | 45.3°C | 63.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | L3 | TF2221 | 46.3°C | 64.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | BD1 | 4A/800V SILICON UR4KB80 | 43.8°C | 62.0°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | L1 | TR991 | 44.9°C | 62.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Q1 | NDF10N60ZG 10A/600V TO220F | 48.8°C | 66.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | D2 | 2A/800V GP20K T-52mm | 59.3°C | 77.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Q3 | STP9NK70ZFP 7.5A/700V TO220F | 57.6°C | 75.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | C16 | 22u/50V UL10Kh 5*11 YXM | 53.6°C | 71.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | U1 | FAN6921MR SOP | 56.7°C | 74.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | C201 | 47u/50V UL10Kh 6.3*11 YXM | 55.4°C | 72.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | RTH2 | NTC 100KΩ 3Φ TTC3A104F4193EY 1% | 50.5°C | 68.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | C5 | 33u/450V 105°C 16*20 KXJ | 50.6°C | 68.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | C105 | 820u/25V UL10Kh 10*20 ZLH | 57.2°C | 74.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | D101 | PFR30L60CT 30A/60V TO220 | 59.4°C | 77.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | C111 | 330u/25V UL8Kh 8*11.5 ZLH | 54.2°C | 72.0°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | LF100 | TR895-R2 | 53.8°C | 71.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | D3 | 2A/800V GP20K T-52mm | 50.1°C | 67.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | LF1 | TR732A-R1 | 35.7°C | 54.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | T1 | TF2203 | 58.2°C | 75.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | I/P : 305VAC/100VAC O/P : 95 % LOAD Ta= -40 °C | TEST : OK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE | I/P : 305 VAC O/P : 95 LOAD Ta= 50 °C HUMIDITY= 95 %R.H | TEST : OK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | TEMPERATURE COEFFICIENT | ± 0.03 % (0-50°C) | I/P : 230 VAC O/P : 95 LOAD | ± 0 % (0-50°C) | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | STORAGE TEMPERATURE TEST | 1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 5 CYCLE 5. Input/Output condition : STATIC | | OK | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 6 | THERMAL SHOCK TEST | 1. Thermal shock Temperature : -35°C~ +55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : 230VAC/Full Load AC ON/OFF TEST turn on 58sec ; turn off 2sec | OK | P |
| 7 | VIBRATION TEST | 1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 5G (5) Test Time : 72min in each axis (X.Y.Z) (6) Ta : 25°C | TEST : OK | P |
| 8 | CAPACITOR LIFE CYCLE | LPF-40-12:SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta=25 °C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta=50 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 50 °C LIFE TIME | (1) 414338 HRS (2) 94640 HRS (3) 124930 HRS | P |
| 9 | MTBF | MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE : 438.8 KHRS | | P |
| 10 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure(Expected Life) : 30,000 hours @ Tcase 80°C; 50,000 hours @ Tcase70°C | | P |

| DATE | SAMPLE | TEST RESULT | TESTER | APPROVAL |
|------------|----------------|-------------|------------|---------------|
| 2010/11/11 | RD SAMPLE | PASS | SANFORD SU | VINCENT TSENG |
| 2010/11/19 | PRODUCT SAMPLE | PASS | SANFORD SU | VINCENT TSENG |

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