

MODEL : RSP-1500-5

## OUTPUT FUNCTION TEST

| NO | TEST ITEM                      | SPECIFICATION           | TEST CONDITION                                                | RESULT                                             | VERDICT |
|----|--------------------------------|-------------------------|---------------------------------------------------------------|----------------------------------------------------|---------|
| 1  | RIPPLE & NOISE                 | V1: 150 mVp-p (Max )    | I/P: 230VAC<br>O/P:FULL LOAD<br>Ta:25°C                       | V1: 20 mVp-p (Max )                                | P       |
| 2  | OUTPUT VOLTAGE<br>ADJUST RANGE | CH1: 4.5V~5.5 V         | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:MIN LOAD<br>Ta:25°C       | 4.29 V~ 5.69 V/ 230 VAC<br>4.29 V~ 5.69 V/ 115 VAC | P       |
| 3  | OUTPUT VOLTAGE<br>TOLERANCE    | V1: 2 %~ -2 % (Max)     | I/P: 100 VAC / 264 VAC<br>O/P:FULL/ MIN LOAD<br>Ta:25°C       | V1: 0.12 %~ -0.12 %                                | P       |
| 4  | LINE REGULATION                | V1: 0.5 %~ -0.5 % (Max) | I/P: 100 VAC ~ 264 VAC<br>O/P:FULL LOAD<br>Ta:25°C            | V1: 0.12 %~ -0.12 %                                | P       |
| 5  | LOAD REGULATION                | V1: 2 %~ -2 % (Max)     | I/P: 230 VAC<br>O/P:FULL ~MIN LOAD<br>Ta:25°C                 | V1: 0.12 %~ -0.12 %                                | P       |
| 6  | SET UP TIME                    | 230VAC: 1500 ms (Max)   | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25°C                      | 230VAC/ 1200 ms                                    | P       |
| 7  | RISE TIME                      | 230VAC: 100 ms (Max)    | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25°C                      | 230VAC/ 64 ms                                      | P       |
| 8  | HOLD UP TIME                   | 230VAC: 10 ms (TYP)     | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25°C                      | 230VAC/ 11.6 ms                                    | P       |
| 9  | OVER/UNDERSHOOT TEST           | < +5%                   | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25°C                      | TEST: <5 %                                         | P       |
| 10 | DYNAMIC LOAD                   | V1: 1000 mVp-p          | I/P: 230 VAC<br>O/P:FULL /Min LOAD<br>90%DUTY/1KHZ<br>Ta:25°C | 694 mVp-p                                          | P       |

## INPUT FUNCTION TEST

| NO | TEST ITEM             | SPECICATION                                        | TEST CONDITION                                                                                                                           | RESULT                                    | VERDICT |
|----|-----------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------|
| 1  | INPUT VOLTAGE RANGE   | 100VAC~264 VAC                                     | I/P:TESTING<br>O/P:FULL LOAD<br>Ta:25°C                                                                                                  | 85V~264V                                  | P       |
|    |                       |                                                    | I/P:<br>LOW-LINE-3V= 97 V<br>HIGH-LINE+15%=300 V<br>O/P:FULL/MIN LOAD<br>ON: 30 Sec . OFF: 30 Sec 10MIN<br>( AC POWER ON/OFF NO DAMAGE ) | TEST: OK                                  |         |
| 2  | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE OSC                       | I/P: 90 VAC ~ 264 VAC<br>O/P:FULL~MIN LOAD<br>Ta:25°C                                                                                    | TEST: OK                                  | P       |
| 3  | POWER FACTOR          | 0.95 / 230 VAC(TYP)<br>0.98 / 115 VAC(TYP)         | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25°C                                                                                 | PF= 0.96 / 230 VAC<br>PF= 0.99 / 115 VAC  | P       |
| 4  | EFFICIENCY            | 80 % (TYP)                                         | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25°C                                                                                                 | 81.1 %                                    | P       |
| 5  | INPUT CURRENT         | 230V/ 8 A (TYP)<br>115V/ 17 A (TYP)                | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25°C                                                                                 | I = 6.9 A/ 230 VAC<br>I = 14.1 A/ 115 VAC | P       |
| 6  | INRUSH CURRENT        | 230V/ 60 A (TYP)<br>115V/ 30 A (TYP)<br>COLD START | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25°C                                                                                 | I = 50 A/ 230 VAC<br>I = 25 A/ 115 VAC    | P       |
| 7  | LEAKAGE CURRENT       | < 2 mA / 240 VAC                                   | I/P: 254 VAC<br>O/P:Min LOAD<br>Ta:25°C                                                                                                  | L-FG: 0.9 mA<br>N-FG: 0.9 mA              | P       |

## PROTECTION FUNCTION TEST

| NO | TEST ITEM                   | SPECICATION                                  | TEST CONDITION                                          | RESULT                                                                                                                             | VERDICT |
|----|-----------------------------|----------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | OVER LOAD PROTECTION        | 105 %~ 135 %                                 | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:TESTING<br>Ta:25°C  | 122 %/ 230 VAC<br>123 %/ 115 VAC<br>Constant Current Limiting unit will shut down o/p voltage after 5sec<br>Re-power on to recover | P       |
| 2  | OVER VOLTAGE PROTECTION     | CH1: 5.75 V~ 6.75 V                          | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:MIN LOAD<br>Ta:25°C | 6.5 V/ 230 VAC<br>6.5 V/ 115 VAC<br>Shunt down Re- power ON                                                                        | P       |
| 3  | OVER TEMPERATURE PROTECTION | SPEC:<br>TSW2 : 95 ± 5°C O.T.P.<br>NO DAMAGE | I/P: 264 VAC<br>O/P:FULL LOAD                           | O.T.P. Active<br>Shut down o/p voltage , recovers automatically after temperature goes down                                        | P       |
| 4  | SHORT PROTECTION            | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE       | I/P: 264 VAC<br>O/P:FULL LOAD<br>Ta:25°C                | NO DAMAGE<br>Constant Current Limiting unit will shut down o/p voltage after 5sec<br>Re-power on to recover                        | P       |

## CONTROL FUNCTION TEST

| NO                                       | TEST ITEM                                                                                    | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                  | TEST CONDITION                              | RESULT                                                                                                                                                                                                                                                                                                      | VERDICT                                  |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
|------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------|-----------|-----------------------------------------------------------------------------------|-----------|----------|----------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|--------------------------------|----------|-------------------------------------|---|---|
| 1                                        | AUXILIARY POWER (AUX)                                                                        | 12V @ 0.1A<br>(Only for Remote ON/OFF control )                                                                                                                                                                                                                                                                                                                                                | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃     | 12.25V                                                                                                                                                                                                                                                                                                      | P                                        |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| 2                                        | REMOTE CONTROL                                                                               | Table1.1 Fig1.2(a)(b)(c)<br>Specification of Remote ON/OFF                                                                                                                                                                                                                                                                                                                                     | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃     | <table><tr><td colspan="2">Connection Method</td><td>Fig1.2(a)</td><td>Fig1.2(b)</td><td>Fig1.2(c)</td></tr><tr><td rowspan="2">SW Logic</td><td>Output on</td><td>SW Open</td><td>SW Open</td><td>SW Close</td></tr><tr><td>Output off</td><td>SW Close</td><td>SW Close</td><td>SW Open</td></tr></table> | Connection Method                        |                                       | Fig1.2(a) | Fig1.2(b)                                                                         | Fig1.2(c) | SW Logic | Output on                                                                                    | SW Open                                 | SW Open                                                                                                                                                                                     | SW Close        | Output off | SW Close                       | SW Close | SW Open                             | P |   |
| Connection Method                        |                                                                                              | Fig1.2(a)                                                                                                                                                                                                                                                                                                                                                                                      | Fig1.2(b)                                   | Fig1.2(c)                                                                                                                                                                                                                                                                                                   |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| SW Logic                                 | Output on                                                                                    | SW Open                                                                                                                                                                                                                                                                                                                                                                                        | SW Open                                     | SW Close                                                                                                                                                                                                                                                                                                    |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
|                                          | Output off                                                                                   | SW Close                                                                                                                                                                                                                                                                                                                                                                                       | SW Close                                    | SW Open                                                                                                                                                                                                                                                                                                     |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| 3                                        | ALARM SIGNAL OUTPUT                                                                          | <table><tr><th colspan="2">Table2.1 Explanation of alarm</th></tr><tr><td>Pin</td><td>POK Alarm</td></tr><tr><td>P OK</td><td rowspan="2">The signal is "LOW"when ther power supply is above 65%of the rated output voltage</td></tr><tr><td>P OK GND</td></tr><tr><td></td><td>The signal turns to be "HIGH" when ther power supply is under 65%of the rated output voltage</td></tr></table> | Table2.1 Explanation of alarm               |                                                                                                                                                                                                                                                                                                             | Pin                                      | POK Alarm                             | P OK      | The signal is "LOW"when ther power supply is above 65%of the rated output voltage | P OK GND  |          | The signal turns to be "HIGH" when ther power supply is under 65%of the rated output voltage | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃ | <table><tr><th colspan="2">Output of alarm</th></tr><tr><td colspan="2">Good:Low<br/>(0.5V max at 10mA)</td></tr><tr><td colspan="2">Fail:High or open<br/>(50V 10mA max)</td></tr></table> | Output of alarm |            | Good:Low<br>(0.5V max at 10mA) |          | Fail:High or open<br>(50V 10mA max) |   | P |
| Table2.1 Explanation of alarm            |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| Pin                                      | POK Alarm                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| P OK                                     | The signal is "LOW"when ther power supply is above 65%of the rated output voltage            |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| P OK GND                                 |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
|                                          | The signal turns to be "HIGH" when ther power supply is under 65%of the rated output voltage |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| Output of alarm                          |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| Good:Low<br>(0.5V max at 10mA)           |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| Fail:High or open<br>(50V 10mA max)      |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| 4                                        | OUTPUT VOLTAGE TRIM                                                                          | Adjustment of output voltage is possible between 75~100% of the rated output by following                                                                                                                                                                                                                                                                                                      | I/P: 230 VAC<br>O/P:NOL LOAD<br>Ta:25℃      | 71%~100%                                                                                                                                                                                                                                                                                                    | P                                        |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| 5                                        | CURRENT SHARING                                                                              | PSU1-PSU2 < 10%                                                                                                                                                                                                                                                                                                                                                                                | I/P: 230 VAC<br>O/P:FULL/50% LOAD<br>Ta:25℃ | <table><tr><td>O/P:100%<br/>PSU1: 1574 W<br/>PSU2: 1538 W</td></tr><tr><td>O/P:50%<br/>PSU1: 780 W<br/>PSU2: 753 W</td></tr></table>                                                                                                                                                                        | O/P:100%<br>PSU1: 1574 W<br>PSU2: 1538 W | O/P:50%<br>PSU1: 780 W<br>PSU2: 753 W | P         |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| O/P:100%<br>PSU1: 1574 W<br>PSU2: 1538 W |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| O/P:50%<br>PSU1: 780 W<br>PSU2: 753 W    |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                             |                                          |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |
| 6                                        | REMOTE SENSE                                                                                 | >0.25V                                                                                                                                                                                                                                                                                                                                                                                         | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃     | > 0.25 V                                                                                                                                                                                                                                                                                                    | P                                        |                                       |           |                                                                                   |           |          |                                                                                              |                                         |                                                                                                                                                                                             |                 |            |                                |          |                                     |   |   |

## ENVIRONMENT TEST

| NO | TEST ITEM                                                         | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TEST CONDITION                                                 | RESULT                      | VERDICT |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
|----|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------|---------|----------|-----|-----------------------------|-----------------------------|---|-----|--------|--------|--------|---|-----|---------------------|--------|--------|---|----|---------------------|--------|--------|---|---------|---------|--------|--------|---|----|----------------------|--------|--------|---|----|---------|--------|--------|---|----|-----------|--------|--------|---|-----|-------------------------|--------|--------|---|-----------|---------|--------|--------|----|-----------|---------|--------|--------|----|------|---------------------|--------|--------|----|------|---------------------|--------|--------|----|------|--------|--------|--------|----|------|-------|--------|--------|----|------|----------------------|--------|--------|---|
| 1  | TEMPERATURE RISE TEST                                             | <div>MODEL : RSP-1500-5</div> <div>1. ROOM AMBIENT BURN-IN : 1 HRS</div> <div>I/P: 230VAC O/P: FULL LOAD Ta= 37.8 °C</div> <div>2. HIGH AMBIENT BURN-IN : 2 HRS</div> <div>I/P: 230VAC O/P: FULL LOAD Ta= 41.5 °C</div> <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT<br/>Ta= 37.8 °C</th><th>HIGH AMBIENT<br/>Ta= 41.5 °C</th></tr><tr><td>1</td><td>LF2</td><td>TR-541</td><td>49.7°C</td><td>53.1°C</td></tr><tr><td>2</td><td>BD1</td><td>GBJ2506 25A/600V LT</td><td>59.2°C</td><td>62.0°C</td></tr><tr><td>3</td><td>D2</td><td>30ETH06 30A/600V IR</td><td>49.3°C</td><td>52.4°C</td></tr><tr><td>4</td><td>L1 COIL</td><td>TF-1198</td><td>53.8°C</td><td>56.4°C</td></tr><tr><td>5</td><td>Q7</td><td>20N60C3 20A/650V INF</td><td>45.7°C</td><td>49.0°C</td></tr><tr><td>6</td><td>U3</td><td>TOP244P</td><td>54.5°C</td><td>57.8°C</td></tr><tr><td>7</td><td>U2</td><td>UC3855BDW</td><td>52.4°C</td><td>55.7°C</td></tr><tr><td>8</td><td>C17</td><td>150U/400V RUB 105°C MXR</td><td>42.3°C</td><td>45.3°C</td></tr><tr><td>9</td><td>L900 COIL</td><td>TF-1201</td><td>68.9°C</td><td>72.4°C</td></tr><tr><td>10</td><td>T900 COIL</td><td>TF-1199</td><td>78.5°C</td><td>82.6°C</td></tr><tr><td>11</td><td>Q900</td><td>24N50 24A/500V FAIR</td><td>76.6°C</td><td>81.3°C</td></tr><tr><td>12</td><td>D900</td><td>BYC5-600 5A/600V PH</td><td>65.0°C</td><td>69.0°C</td></tr><tr><td>13</td><td>L102</td><td>TR-543</td><td>62.9°C</td><td>66.3°C</td></tr><tr><td>14</td><td>TSW2</td><td>ST-95</td><td>83.6°C</td><td>88.7°C</td></tr><tr><td>15</td><td>D102</td><td>S60SC3ML 60A/30V SHI</td><td>80.3°C</td><td>83.7°C</td></tr></table> |                                                                |                             | NO      | Position | P/N | ROOM AMBIENT<br>Ta= 37.8 °C | HIGH AMBIENT<br>Ta= 41.5 °C | 1 | LF2 | TR-541 | 49.7°C | 53.1°C | 2 | BD1 | GBJ2506 25A/600V LT | 59.2°C | 62.0°C | 3 | D2 | 30ETH06 30A/600V IR | 49.3°C | 52.4°C | 4 | L1 COIL | TF-1198 | 53.8°C | 56.4°C | 5 | Q7 | 20N60C3 20A/650V INF | 45.7°C | 49.0°C | 6 | U3 | TOP244P | 54.5°C | 57.8°C | 7 | U2 | UC3855BDW | 52.4°C | 55.7°C | 8 | C17 | 150U/400V RUB 105°C MXR | 42.3°C | 45.3°C | 9 | L900 COIL | TF-1201 | 68.9°C | 72.4°C | 10 | T900 COIL | TF-1199 | 78.5°C | 82.6°C | 11 | Q900 | 24N50 24A/500V FAIR | 76.6°C | 81.3°C | 12 | D900 | BYC5-600 5A/600V PH | 65.0°C | 69.0°C | 13 | L102 | TR-543 | 62.9°C | 66.3°C | 14 | TSW2 | ST-95 | 83.6°C | 88.7°C | 15 | D102 | S60SC3ML 60A/30V SHI | 80.3°C | 83.7°C | P |
| NO | Position                                                          | P/N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ROOM AMBIENT<br>Ta= 37.8 °C                                    | HIGH AMBIENT<br>Ta= 41.5 °C |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 1  | LF2                                                               | TR-541                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 49.7°C                                                         | 53.1°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 2  | BD1                                                               | GBJ2506 25A/600V LT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 59.2°C                                                         | 62.0°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 3  | D2                                                                | 30ETH06 30A/600V IR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 49.3°C                                                         | 52.4°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 4  | L1 COIL                                                           | TF-1198                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 53.8°C                                                         | 56.4°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 5  | Q7                                                                | 20N60C3 20A/650V INF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 45.7°C                                                         | 49.0°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 6  | U3                                                                | TOP244P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 54.5°C                                                         | 57.8°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 7  | U2                                                                | UC3855BDW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 52.4°C                                                         | 55.7°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 8  | C17                                                               | 150U/400V RUB 105°C MXR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 42.3°C                                                         | 45.3°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 9  | L900 COIL                                                         | TF-1201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 68.9°C                                                         | 72.4°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 10 | T900 COIL                                                         | TF-1199                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 78.5°C                                                         | 82.6°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 11 | Q900                                                              | 24N50 24A/500V FAIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 76.6°C                                                         | 81.3°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 12 | D900                                                              | BYC5-600 5A/600V PH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 65.0°C                                                         | 69.0°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 13 | L102                                                              | TR-543                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 62.9°C                                                         | 66.3°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 14 | TSW2                                                              | ST-95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 83.6°C                                                         | 88.7°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 15 | D102                                                              | S60SC3ML 60A/30V SHI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 80.3°C                                                         | 83.7°C                      |         |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 2  | OVER LOAD BURN-IN TEST                                            | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P: 230 VAC<br>O/P:119% LOAD<br>Ta:25°C                       | TEST : OK                   | P       |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 3  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER 2 HOUR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I/P: 230 VAC<br>O/P: 100% LOAD<br>Ta= -20°C                    | TEST : OK                   | P       |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 4  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 40°C<br>NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I/P: 272 VAC<br>O/P:FULL LOAD<br>Ta= 40°C<br>HUMIDITY= 95 %R.H | TEST : OK                   | P       |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | ± 0.05 %(0~50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P: 230 VAC<br>O/P:FULL LOAD                                  | ± 0.01%(0~50°C)             | P       |          |     |                             |                             |   |     |        |        |        |   |     |                     |        |        |   |    |                     |        |        |   |         |         |        |        |   |    |                      |        |        |   |    |         |        |        |   |    |           |        |        |   |     |                         |        |        |   |           |         |        |        |    |           |         |        |        |    |      |                     |        |        |    |      |                     |        |        |    |      |        |        |        |    |      |       |        |        |    |      |                      |        |        |   |
| 6  | VIBRATION TEST                                                    | 1 Carton & 1 Set<br>(1) Waveform: Sine Wave<br>(2) Frequency:10~500Hz<br>(3) Sweep Time:10min/sweep cycle<br>(4) Acceleration:2G<br>(5) Test Time:1 hour in each axis (X.Y.Z)<br>(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<br>I/P-FG: 1.5 KVAC/min<br>O/P-FG: 0.5 KVAC/min | I/P-O/P: 3.6 KVAC/min<br>I/P-FG: 1.8 KVAC/min<br>O/P-FG: 0.6 KVAC/min<br>Ta:25°C | I/P-O/P: 10.92 mA<br>I/P-FG: 8.3 mA<br>O/P-FG: 15.52 mA<br>NO DAMAGE | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ<br>I/P-FG: 500VDC>100MΩ<br>O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC<br>I/P-FG: 500 VDC<br>O/P-FG: 500 VDC<br>Ta:25°C                | I/P-O/P: 6 GΩ<br>I/P-FG: 6 GΩ<br>O/P-FG: 6 GΩ<br>NO DAMAGE           | P       |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                              | 40 A / 2min<br>Ta:25°C                                                           | 9 mΩ                                                                 | P       |
| 4  | APPROVAL             | TUV: Certificate NO : R50063850<br>UL: File NO : E183223            |                                                                                  |                                                                      | P       |

## E.M.C TEST

| NO | TEST ITEM                                   | SPECIFICATION                                            | TEST CONDITION                                      | RESULT                        | VERDICT |
|----|---------------------------------------------|----------------------------------------------------------|-----------------------------------------------------|-------------------------------|---------|
| 1  | HARMONIC                                    | EN61000-3-2<br>CLASS A                                   | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25°C       | PASS                          | P       |
| 2  | CONDUCTION                                  | EN55022<br>CLASS B                                       | I/P: 230 VAC (50HZ)<br>O/P:FULL/50% LOAD<br>Ta:25°C | PASS<br>Test by certified Lab | P       |
| 3  | RADIATION                                   | EN55022<br>CLASS B                                       | I/P: 230 VAC (50HZ)<br>O/P:FULL LOAD<br>Ta:25°C     | PASS<br>Test by certified Lab | P       |
| 4  | E.S.D                                       | EN61000-4-2<br>LIGHT INDUSTRY<br>AIR:8KV / Contact:4KV   | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25°C       | CRITERIA A                    | P       |
| 5  | E.F.T                                       | EN61000-4-4<br>LIGHT INDUSTRY<br>INPUT: 1KV              | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25°C       | CRITERIA A                    | P       |
| 6  | SURGE                                       | IEC61000-4-5<br>LIGHT INDUSTRY<br>L-N :1KV<br>L,N-PE:2KV | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25°C       | CRITERIA A                    | P       |
| 7  | Test by certified Lab & Test Report Prepare |                                                          |                                                     |                               |         |

## M.T.B.F &amp; LIFE CYCLE CALCULATION

| NO | TEST ITEM               | SPECIFICATION                                                                                                                                                       | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------|---------|
| 1  | CAPACITOR<br>LIFE CYCLE | SUPPOSE C116 IS THE MOST CRITICAL COMPONENT<br>I/P: 230VAC O/P:FULL LOAD Ta= 25°C LIFE TIME= 406245 HRS<br>I/P: 230VAC O/P:FULL LOAD Ta= 40°C LIFE TIME= 146693 HRS |                |        | P       |
| 2  | MTBF                    | MIL-HDBK-217F NOTICES2 PARTS COUNT<br>TOTAL FAILURE RATE: 62.6K HRS                                                                                                 |                |        | P       |

# COMPONENT STRESS TEST

| NO | TEST ITEM                                                         | SPECIFICATION                      | TEST CONDITION                                                                                                                                          | RESULT                                           | VERDICT |
|----|-------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------|
| 1  | Power Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b>     | Q900 Rated<br>FQA24N50 : 500V 24 A | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                                    | (1) 394 V<br>(2) 396 V<br>(3) 392 V              | P       |
| 2  | Diode <b>Peak Voltage</b>                                         | D102 Rated<br>S60SC3ML : 30V 60A   | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                                    | (1) 20.4 V<br>(2) 20.2 V<br>(3) 0.1 V            | P       |
| 3  | Input Capacitor <b>Voltage</b>                                    | C15 Rated<br>: 150 u / 450V/ 105℃  | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load Change<br>(4)Burn in 1hour<br>Ta:25℃ | (1) 462 V<br>(2) 460 V<br>(3) 409 V<br>(4) 394 V | P       |
| 4  | Control IC <b>Voltage Test</b>                                    | U100 Rated<br>UCC2895W : 18 V      | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load Change<br>Ta:25℃                     | (1) 12.6 V<br>(2) 12.6 V<br>(3) 12.6 V           | P       |
| 5  | PFC Power Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b> | Q1 Rated<br>20N60C3 : 600V 20 A    | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                                    | (1) 420 V<br>(2) 442 V<br>(3) 428 V              | P       |

| DATE      | SAMPLE                     | TEST RESULT | TESTER        | APPROVAL |
|-----------|----------------------------|-------------|---------------|----------|
| 2005/4/19 | RD SAMPLE                  | PASS        | VINCENT TSENG | MAX LIN  |
| 2005/7/29 | PRODUCT SAMPLE<br>W0505A40 | PASS        | VINCENT TSENG | MAX LIN  |
| 2005/9/3  | PRODUCT SAMPLE<br>W0507C27 | PASS        | VINCENT TSENG | MAX LIN  |
| 2005/9/8  | PRODUCT SAMPLE<br>W0508A24 | PASS        | VINCENT TSENG | MAX LIN  |
| 2005/9/21 | PRODUCT SAMPLE<br>W0509B35 | PASS        | VINCENT TSENG | MAX LIN  |
| 2006/3/7  | PRODUCT SAMPLE<br>W0602B32 | PASS        | VINCENT TSENG | MAX LIN  |

2003/12/12 A50-F023