



# Test Report: RSP-150-48

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150W Single Output With PFC Function

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

ENVIRONMENT TEST

## DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

| NO | TEST ITEM                      | SPECIFICATION            | TEST CONDITION                                                                                                                                                                                                  | RESULT                                                            | VERDICT |
|----|--------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------|
| 1  | RIPPLE & NOISE                 | V1 : 250 mVp-p (Max )    | I/P : 230VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                                                                                    | V1 : 53.2 mVp-p (Max )                                            | P       |
| 2  | OUTPUT VOLTAGE<br>ADJUST RANGE | CH1 : 45.6 V ~ 52.8V     | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C                                                                                                                                                   | 40.169 V ~ 54.40 V/ 230 VAC<br>40.188 V ~ 54.40 V/ 115 VAC        | P       |
| 3  | OUTPUT VOLTAGE<br>TOLERANCE    | V1 : 1 %~ -1% (Max)      | I/P : 100VAC / 264 VAC<br>O/P : FULL/ MIN LOAD<br>Ta : 25°C                                                                                                                                                     | V1 : -0.02 %~ 0.02 %                                              | 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 %~ 0 %                                                     | P       |
| 5  | LOAD REGULATION                | V1 : 0.5 %~ -0.5 % (Max) | I/P : 230 VAC<br>O/P : FULL ~MIN LOAD<br>Ta : 25°C                                                                                                                                                              | V1 : -0.02 %~ 0.02 %                                              | P       |
| 6  | SET UP TIME                    | 230VAC : 600 ms (Max)    | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                                                                                   | 230VAC/ 409 ms                                                    | P       |
| 7  | RISE TIME                      | 230VAC : 30 ms (Max)     | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                                                                                   | 230VAC/ 22 ms                                                     | P       |
| 8  | HOLD UP TIME                   | 230VAC : 16 ms (TYP)     | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                                                                                   | 230VAC/ 29 ms                                                     | P       |
| 9  | OVER/UNDERSHOOT<br>TEST        | < ±5%                    | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                                                                                   | TEST : <5 %                                                       | P       |
| 10 | DYNAMIC LOAD                   | V1 : 4800 mVp-p          | I/P : 230 VAC<br>(1).O/P : FULL /Min LOAD 90%DUTY/<br>1KHZ<br>(2).O/P : FULL /Min LOAD 90%DUTY/<br>3KHZ<br>(3).O/P : FULL /Min LOAD 90%DUTY/<br>5KHZ<br>(4).O/P : FULL /Min LOAD 50%DUTY/<br>120HZ<br>Ta : 25°C | (1) 996 mVp-p<br>(2) 528 mVp-p<br>(3) 396 mVp-p<br>(4) 4440 mVp-p | P       |

## INPUT FUNCTION TEST

| NO | TEST ITEM             | SPECIFICATION                              | TEST CONDITION                                                                                                                                | RESULT                                     | VERDICT |
|----|-----------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------|
| 1  | INPUT VOLTAGE RANGE   | 100VAC~264 VAC                             | I/P : TESTING<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                 | 69 V~264V<br><br>TEST : OK                 | 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 ) |                                            |         |
| 2  | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE OSC               | I/P : 100 VAC ~ 264 VAC<br>O/P : FULL~MIN LOAD<br>Ta : 25°C                                                                                   | TEST : OK                                  | P       |
| 3  | POWER FACTOR          | 0.93 / 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= 0.963 / 230 VAC<br>PF= 0.997 / 115 VAC | P       |
|    |                       |                                            |                                                                                                                                               |                                            |         |
| 4  | EFFICIENCY            | 90% (TYP)                                  | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                 | 90.39 %                                    | P       |
| 5  | INPUT CURRENT         | 230V/ 0.8 A (TYP)<br>115V/ 1.6 A (TYP)     | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                | I = 0.757 A/ 230 VAC<br>I = 1.5 A/ 115 VAC | P       |
|    |                       |                                            |                                                                                                                                               |                                            |         |
| 6  | INRUSH CURRENT        | 230V/ 40 A (TYP)                           | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                 | I = 34 A/ 230 VAC                          | P       |
|    |                       | COLD START                                 |                                                                                                                                               |                                            |         |
| 7  | LEAKAGE CURRENT       | < 2 mA / 240 VAC                           | I/P : 240VAC<br>O/P : Min LOAD<br>Ta : 25°C                                                                                                   | L-FG : 0.52 mA<br>N-FG : 0.52 mA           | P       |
|    |                       |                                            |                                                                                                                                               |                                            |         |

## PROTECTION FUNCTION TEST

| NO | TEST ITEM                   | SPECIFICATION                                                                    | TEST CONDITION                                                | RESULT                                                                                                                           | VERDICT |
|----|-----------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | OVER LOAD PROTECTION        | 105 % ~ 150 %                                                                    | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : TESTING<br>Ta : 25°C  | 122.8 %/ 230 VAC<br>123.1 %/ 115 VAC<br>Constant current limiting,<br>recovers automatically after<br>fault condition is removed | P       |
| 2  | OVER VOLTAGE PROTECTION     | CH1 : 52.8 V ~64.8 V                                                             | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C | 59.19 V/ 230 VAC<br>59.20 V/ 115 VAC<br>Shut down Re- power ON                                                                   | P       |
| 3  | OVER TEMPERATURE PROTECTION | Shut down o/p voltage , recovers<br>automatically after temperature<br>goes down | I/P : 230 VAC<br>O/P : FULL LOAD                              | O.T.P. Active<br>Shut down o/p voltage , recovers<br>automatically after temperature<br>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,<br>recovers automatically after<br>fault condition is removed                            | P       |

## COMPONENT STRESS TEST

| NO | TEST ITEM                                              | SPECIFICATION                                    | TEST CONDITION                                                                                                                               | RESULT                                 | VERDICT |
|----|--------------------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------|
| 1  | Power Transistor<br>( D to S) or (C to E) Peak Voltage | Q3 Rated :<br>12A/500V                           | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue<br>Ta : 25°C                          | (1) 390 V<br>(2) 388 V<br>(3) 386 V    | P       |
| 2  | Diode Peak Voltage                                     | Q103 Rated :<br>20A/300V                         | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2)Output Short<br>(3)Full load continue<br>Ta : 25°C                           | (1) 294 V<br>(2) 286 V<br>(3) 290 V    | P       |
| 3  | Input Capacitor Voltage                                | C 5 Rated :<br>100u/400V<br>(SURGE VOLTAGE 450V) | 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<br>Change<br>Ta : 25°C | (1) 380 V<br>(2) 378 V<br>(3) 406 V    | P       |
| 4  | Control IC Voltage Test                                | U 1 Rated :<br>12V~30V                           | 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<br>Change<br>Ta : 25°C | (1) 17.8 V<br>(2) 15.1 V<br>(3) 17.7 V | P       |
| 5  | Power Transistor<br>( D to S) or (C to E) Peak Voltage | Q 1 Rated :<br>13A/500V                          | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue<br>Ta : 25°C                          | (1) 392 V<br>(2) 376 V<br>(3) 390 V    | P       |

## SAFETY & E.M.C. TEST

### SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION                                                            | TEST CONDITION                                                                        | RESULT                                                                  | VERDICT |
|----|----------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P : 4 KVAC/min<br>I/P-FG : 2 KVAC/min<br>O/P-FG : 0.5 KVAC/min     | I/P-O/P : 4.4 KVAC/min<br>I/P-FG : 2.4 KVAC/min<br>O/P-FG : 0.6 KVAC/min<br>Ta : 25°C | I/P-O/P : 5.03 mA<br>I/P-FG : 4.29 mA<br>O/P-FG : 2.149 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 / 70%RH        | I/P-O/P : 30 GΩ<br>I/P-FG : 30 GΩ<br>O/P-FG : 30 GΩ<br>NO DAMAGE        | P       |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                                   | 40 A / 2min<br>Ta : 25°C / 70%RH                                                      | 13 mΩ                                                                   | P       |

### E.M.C TEST

| NO | TEST ITEM                                   | SPECIFICATION                                               | TEST CONDITION                                           | RESULT                        | VERDICT |
|----|---------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------|-------------------------------|---------|
| 1  | HARMONIC                                    | EN61000-3-2<br>CLASS A<br>CLASS D                           | 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 |                                                             |                                                          |                               |         |

## RELIABILITY TEST

### ENVIRONMENT TEST

| NO | TEST ITEM                                                         | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | TEST CONDITION                                                     | RESULT                | VERDICT |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
|----|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------|---------|----------|--------------------------|-----------------------------|---|-----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|-----|--------|--------|---|-----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|----|--------|--------|----|------|--------|--------|----|-----|--------|--------|----|-----|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|----|--------|--------|----|----|--------|--------|---|
| 1  | TEMPERATURE RISE TEST                                             | <div>MODEL : RSP-150-24</div> <div>1. ROOM AMBIENT BURN-IN : 2 HRS</div> <div>I/P : 230VAC O/P : FULL LOAD Ta=27 °C</div> <div>2. HIGH AMBIENT BURN-IN : 2 HRS</div> <div>I/P : 230VAC O/P : FULL LOAD Ta= 39.2 °C</div> <table><thead><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT<br/>Ta= 27°C</th><th>HIGH AMBIENT<br/>Ta= 39.2 °C</th></tr></thead><tbody><tr><td>1</td><td>BD1</td><td>55.5°C</td><td>63.0°C</td></tr><tr><td>2</td><td>Q1</td><td>67.5°C</td><td>75.5°C</td></tr><tr><td>3</td><td>C5</td><td>56.4°C</td><td>63.8°C</td></tr><tr><td>4</td><td>L1</td><td>83.6°C</td><td>91.2°C</td></tr><tr><td>5</td><td>C61</td><td>56.9°C</td><td>71.2°C</td></tr><tr><td>6</td><td>C10</td><td>68.6°C</td><td>75.6°C</td></tr><tr><td>7</td><td>Q3</td><td>54.0°C</td><td>60.0°C</td></tr><tr><td>8</td><td>T1</td><td>89.8°C</td><td>96.4°C</td></tr><tr><td>9</td><td>U1</td><td>62.8°C</td><td>69.7°C</td></tr><tr><td>10</td><td>C202</td><td>58.6°C</td><td>68.8°C</td></tr><tr><td>11</td><td>C18</td><td>62.0°C</td><td>72.6°C</td></tr><tr><td>12</td><td>TSW</td><td>72.4°C</td><td>82.0°C</td></tr><tr><td>13</td><td>Q101</td><td>68.4°C</td><td>77.2°C</td></tr><tr><td>14</td><td>L100</td><td>80.1°C</td><td>86.6°C</td></tr><tr><td>15</td><td>C105</td><td>55.7°C</td><td>63.2°C</td></tr><tr><td>16</td><td>R5</td><td>72.5°C</td><td>79.3°C</td></tr><tr><td>17</td><td>D5</td><td>60.7°C</td><td>67.6°C</td></tr></tbody></table> |                                                                    |                       | NO      | Position | ROOM AMBIENT<br>Ta= 27°C | HIGH AMBIENT<br>Ta= 39.2 °C | 1 | BD1 | 55.5°C | 63.0°C | 2 | Q1 | 67.5°C | 75.5°C | 3 | C5 | 56.4°C | 63.8°C | 4 | L1 | 83.6°C | 91.2°C | 5 | C61 | 56.9°C | 71.2°C | 6 | C10 | 68.6°C | 75.6°C | 7 | Q3 | 54.0°C | 60.0°C | 8 | T1 | 89.8°C | 96.4°C | 9 | U1 | 62.8°C | 69.7°C | 10 | C202 | 58.6°C | 68.8°C | 11 | C18 | 62.0°C | 72.6°C | 12 | TSW | 72.4°C | 82.0°C | 13 | Q101 | 68.4°C | 77.2°C | 14 | L100 | 80.1°C | 86.6°C | 15 | C105 | 55.7°C | 63.2°C | 16 | R5 | 72.5°C | 79.3°C | 17 | D5 | 60.7°C | 67.6°C | P |
| NO | Position                                                          | ROOM AMBIENT<br>Ta= 27°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | HIGH AMBIENT<br>Ta= 39.2 °C                                        |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 1  | BD1                                                               | 55.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 63.0°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 2  | Q1                                                                | 67.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 75.5°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 3  | C5                                                                | 56.4°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 63.8°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 4  | L1                                                                | 83.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 91.2°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 5  | C61                                                               | 56.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 71.2°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 6  | C10                                                               | 68.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 75.6°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 7  | Q3                                                                | 54.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 60.0°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 8  | T1                                                                | 89.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 96.4°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 9  | U1                                                                | 62.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 69.7°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 10 | C202                                                              | 58.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 68.8°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 11 | C18                                                               | 62.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 72.6°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 12 | TSW                                                               | 72.4°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 82.0°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 13 | Q101                                                              | 68.4°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 77.2°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 14 | L100                                                              | 80.1°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86.6°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 15 | C105                                                              | 55.7°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 63.2°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 16 | R5                                                                | 72.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 79.3°C                                                             |                       |         |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 17 | D5                                                                | 60.7°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 67.6°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 : 264VAC/100VAC<br>O/P : 100 % LOAD<br>Ta= -35 °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=50 °C<br>NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P : 272 VAC<br>O/P : FULL LOAD<br>Ta= 50 °C<br>HUMIDITY= 95 %R.H | TEST : OK             | P       |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | ± 0.03 %/°C (0~50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I/P : 230 VAC<br>O/P : FULL LOAD                                   | ± 0.007 %/°C (0~50°C) | P       |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |
| 6  | STORAGE TEMPERATURE TEST                                          | 1. Thermal shock Temperature : -45°C~ +90°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 5 CYCLE<br>5. Input/Output condition : STATIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                    | OK                    | P       |          |                          |                             |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |      |        |        |    |     |        |        |    |     |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |   |

|    |                             |                                                                                                                                                                                                                                                                                  |                                                                      |   |
|----|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---|
| 7  | THERMAL SHOCK TEST          | 1. Thermal shock Temperature : -35℃~ +55℃<br>2. Temperature change rate : 25℃ / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 10 CYCLE<br>5. Input/Output condition : 230VAC/Full Load AC ON/OFF TEST<br>turn on 58sec ; turn off 2sec    | OK                                                                   | P |
| 8  | VIBRATION TEST              | 1 Carton & 1 Set<br>(1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(3) Sweep Time : 12min/sweep cycle<br>(4) Acceleration : 2G<br>(5) Test Time : 60min in each axis (X.Y.Z)<br>(6) Ta : 25℃                                                                            | TEST : OK                                                            | P |
| 9  | CAPACITOR LIFE CYCLE        | RSP-150-24:SUPPOSE C105 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 230VAC O/P : FULL LOAD Ta= 25 ℃ LIFE TIME<br>(2) I/P : 230VAC O/P : FULL LOAD Ta= 50 ℃ LIFE TIME<br>(3) I/P : 230VAC O/P : 75% LOAD Ta= 50 ℃ LIFE TIME<br>(4) I/P : 230VAC O/P : 50% LOAD Ta= 50 ℃ LIFE TIME | (1) 419889 HRS<br>(2) 102754 HRS<br>(3) 139449 HRS<br>(4) 185245 HRS | P |
| 10 | MTBF                        | MIL-HDBK-217F NOTICE S2 PARTS COUNT<br>TOTAL FAILURE RATE : 290.7 KHRS                                                                                                                                                                                                           |                                                                      | P |
| 11 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure (Expected Life): Above 30,000 hours @ TA 50℃                                                                                                                                                                                             |                                                                      | P |

| SAMPLE         | TESTER     | REVIEW     | APPROVAL     |
|----------------|------------|------------|--------------|
| PRODUCT SAMPLE | DANIEL GAO | SANFORD SU | VINCENT ZENG |

2009/08/04 A50-F023