



# Test Report:RSP-100-3.3

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100W Single Output Switching Power Supply

## ■ 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 : 100 mVp-p (Max)       | I/P : 230VAC<br>O/P : FULL LOAD<br>Ta : 25°C  | V1 : 55 mVp-p (Max)  | P       |
| 2  | OUTPUT VOLTAGE ADJUST RANGE | CH1 : 3.14 V ~ 3.63 V      | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C   | 3.055 V ~ 3.755 V / 230 VAC<br>3.055 V ~ 3.753 V / 115 VAC       | P       |
| 3  | OUTPUT VOLTAGE TOLERANCE    | V1 : -2 % ~ +2 % (Max)     | I/P : 100 VAC / 264 VAC<br>O/P : FULL / MIN LOAD<br>Ta : 25°C   | V1 : -0.93 % ~ 1.11 %  | 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 : -0.18 % ~ 0.18 %  | P       |
| 5  | LOAD REGULATION             | V1 : -1 % ~ +1 % (Max)     | I/P : 230 VAC<br>O/P : FULL ~ MIN LOAD<br>Ta : 25°C   | V1 : -0.75 % ~ 0.93 %  | P       |
| 6  | SET UP TIME                 | 230VAC : 600 ms (Max)      | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | 230VAC / 356 ms  | P       |
| 7  | RISE TIME                   | 230VAC : 30 ms (Max)       | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | 230VAC / 6.2 ms  | P       |
| 8  | HOLD UP TIME                | 230VAC : 16 ms (TYP)       | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | 230VAC / 47.9 ms   | P       |
| 9  | OVER/UNDERSHOOT TEST        | < ±10%                     | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | TEST : <10 %   | P       |
| 10 | DYNAMIC LOAD                | V1 : 660 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) 540 mVp-p<br>(2) 436 mVp-p<br>(3) 456 mVp-p<br>(4) 632 mVp-p | P       |

**INPUT FUNCTION TEST**

| NO | TEST ITEM             | SPECIFICATION                              | TEST CONDITION   | RESULT                                       | VERDICT |
|----|-----------------------|--|--|--|---------|
| 1  | INPUT VOLTAGE RANGE   | 85VAC~264 VAC                              | I/P : TESTING<br>O/P : FULL LOAD<br>Ta : 25°C<br><br>I/P :<br>LOW-LINE-3V= 82 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 )<br>NOR-LINE FULL LOAD | 71.700 V-264V<br><br>TEST : OK               | P       |
| 2  | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE OSC               | I/P : 85 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= 0.948 / 230 VAC<br>PF= 0.994 / 115 VAC   | P       |
| 4  | EFFICIENCY            | 83% (TYP)                                  | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C  | 84.05 %                                      | P       |
| 5  | INPUT CURRENT         | 230V/ 0.55 A (TYP)<br>115V/ 1.1 A (TYP)    | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | I = 0.362 A/ 230 VAC<br>I = 0.706 A/ 115 VAC | P       |
| 6  | INRUSH CURRENT        | 230V/ 30 A (TYP)<br>COLD START             | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C  | I = 22.9 A/ 230 VAC                          | P       |
| 7  | LEAKAGE CURRENT       | < 2 mA/ 240VAC                             | I/P : 264 VAC<br>O/P : Min LOAD<br>Ta : 25°C   | L-FG : 0.45 mA<br>N-FG : 0.43 mA             | P       |

**PROTECTION FUNCTION TEST**

| NO | TEST ITEM                   | SPECIFICATION  | 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  | 119.5 %/230VAC<br>119.5 %/115VAC<br>Constant Current Limiting                               | P       |
| 2  | OVER VOLTAGE PROTECTION     | CH1 : 3.63 V ~4.46 V   | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C | 4.072 V/230VAC<br>4.085 V/ 115 VAC<br>Shut down Re- power ON                                | P       |
| 3  | OVER TEMPERATURE PROTECTION | SPEC :<br>Shut down o/p voltage , recovers automatically after temperature goes down | I/P : 230 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  | P       |

**CONTROL FUNCTION TEST**

|   |                |   |   |   |   |
|---|----------------|---|---|---|---|
| 1 | REMOTE CONTROL | CN1<br>POWER ON : < 0-0.8V"<br>POWEROFF : 4-10 V" | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | POWER ON: : <0-0.8 V<br>POWER OFF: : 4-10 V | 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 : 500 V 19A                              | 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>(4) Dynamic Load<br>90%Duty/1KHz<br>(5) Dynamic Load<br>50%Duty/120Hz<br><br>Ta : 25°C                             | (1) 396 V<br>(2) 410 V<br>(3) 392 V<br>(4) 400 V<br>(5) 404 V                    | P       |
| 2  | Diode Peak Voltage                                     | Q103 Rated : 40V 80 A                             | 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>(4)NO LOAD TURN ON<br>(5) Dynamic Load<br>90%Duty/1KHz ON/OFF<br>(6) Dynamic Load<br>50%Duty/120Hz<br><br>Ta : 25°C | (1) 18.5 V<br>(2) 20.5 V<br>(3) 18.8 V<br>(4) 26.2 V<br>(5) 36.5 V<br>(6) 36.8 V | P       |
| 3  | Clamp Diode Peak Voltage                               | D22 Rted : 600 V 1 A                              | I/P : High-Line +3V = 267 V<br>O/P : (1) Dynamic Load<br>90%Duty/1KHz<br>(2)Full load continue<br><br>Ta : 25°C  | (1) 408 V<br>(2) 388 V   | P       |
| 4  | Input Capacitor Voltage                                | C 5 Rated : 68u /400V/105°C<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><br>Ta : 25°C   | (1) 376 V<br>(2) 376 V<br>(3) 396 V  | P       |
| 5  | Control IC Voltage Test                                | U 1 Rated : 26 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<br>Change<br><br>Ta : 25°C   | (1) 14.7 V<br>(2) 14.8 V<br>(3) 15.7 V   | P       |
| 6  | PFC Transistor<br>( D to S) or (C to E) Peak Voltage   | Q 1 Rated : 500 V 19 A                            | 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><br>Ta : 25°C  | (3) 384 V<br>(4) 386 V<br>(3) 388 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 : 2KVAC/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 : 2.536 mA<br>I/P-FG : 2.803 mA<br>O/P-FG : 1.895 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 : 9999 MΩ<br>I/P-FG : 9999 MΩ<br>O/P-FG : 9999 MΩ<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  | 5 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   | MODEL : RSP-100-05<br>1. ROOM AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta=23.8℃<br>2. HIGH AMBIENT BURN-IN : 2 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta=45.9℃ | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT<br/>Ta= 23.5℃</th> <th>HIGH AMBIENT<br/>Ta= 45.9℃</th> </tr> </thead> <tbody> <tr><td>1</td><td>U100</td><td>63.6℃</td><td>83.3℃</td></tr> <tr><td>2</td><td>LF1</td><td>50.5℃</td><td>69.9℃</td></tr> <tr><td>3</td><td>BD1</td><td>65.8℃</td><td>84.5℃</td></tr> <tr><td>4</td><td>Q1</td><td>62.0℃</td><td>83.8℃</td></tr> <tr><td>5</td><td>D1</td><td>54.5℃</td><td>74.5℃</td></tr> <tr><td>6</td><td>L1</td><td>73.7℃</td><td>93.3℃</td></tr> <tr><td>7</td><td>D5</td><td>56.1℃</td><td>76.1℃</td></tr> <tr><td>8</td><td>C5</td><td>49.5℃</td><td>69.2℃</td></tr> <tr><td>9</td><td>T2</td><td>53.7℃</td><td>75.2℃</td></tr> <tr><td>10</td><td>Q3</td><td>51.1℃</td><td>71.5℃</td></tr> <tr><td>11</td><td>Q4</td><td>50.1℃</td><td>70.3℃</td></tr> <tr><td>12</td><td>U1</td><td>51.5℃</td><td>70.6℃</td></tr> <tr><td>13</td><td>TSW1</td><td>63.9℃</td><td>82.3℃</td></tr> <tr><td>14</td><td>T1</td><td>76.7℃</td><td>95.7℃</td></tr> <tr><td>15</td><td>L100</td><td>85.4℃</td><td>105.8℃</td></tr> <tr><td>16</td><td>Q103</td><td>65.2℃</td><td>86.0℃</td></tr> <tr><td>17</td><td>Q101</td><td>60.8℃</td><td>81.2℃</td></tr> <tr><td>18</td><td>C105</td><td>69.6℃</td><td>88.4℃</td></tr> <tr><td>19</td><td>C202</td><td>63.9℃</td><td>83.6℃</td></tr> <tr><td>20</td><td>C18</td><td>56.8℃</td><td>76.1℃</td></tr> </tbody> </table> | NO              | Position | ROOM AMBIENT<br>Ta= 23.5℃ | HIGH AMBIENT<br>Ta= 45.9℃ | 1 | U100 | 63.6℃ | 83.3℃ | 2 | LF1 | 50.5℃ | 69.9℃ | 3 | BD1 | 65.8℃ | 84.5℃ | 4 | Q1 | 62.0℃ | 83.8℃ | 5 | D1 | 54.5℃ | 74.5℃ | 6 | L1 | 73.7℃ | 93.3℃ | 7 | D5 | 56.1℃ | 76.1℃ | 8 | C5 | 49.5℃ | 69.2℃ | 9 | T2 | 53.7℃ | 75.2℃ | 10 | Q3 | 51.1℃ | 71.5℃ | 11 | Q4 | 50.1℃ | 70.3℃ | 12 | U1 | 51.5℃ | 70.6℃ | 13 | TSW1 | 63.9℃ | 82.3℃ | 14 | T1 | 76.7℃ | 95.7℃ | 15 | L100 | 85.4℃ | 105.8℃ | 16 | Q103 | 65.2℃ | 86.0℃ | 17 | Q101 | 60.8℃ | 81.2℃ | 18 | C105 | 69.6℃ | 88.4℃ | 19 | C202 | 63.9℃ | 83.6℃ | 20 | C18 | 56.8℃ | 76.1℃ |  | P |
| NO | Position  | ROOM AMBIENT<br>Ta= 23.5℃  | HIGH AMBIENT<br>Ta= 45.9℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 1  | U100  | 63.6℃  | 83.3℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 2  | LF1   | 50.5℃  | 69.9℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 3  | BD1   | 65.8℃  | 84.5℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 4  | Q1  | 62.0℃  | 83.8℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 5  | D1  | 54.5℃  | 74.5℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 6  | L1  | 73.7℃  | 93.3℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 7  | D5  | 56.1℃  | 76.1℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 8  | C5  | 49.5℃  | 69.2℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 9  | T2  | 53.7℃  | 75.2℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 10 | Q3  | 51.1℃  | 71.5℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 11 | Q4  | 50.1℃  | 70.3℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 12 | U1  | 51.5℃  | 70.6℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 13 | TSW1  | 63.9℃  | 82.3℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 14 | T1  | 76.7℃  | 95.7℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 15 | L100  | 85.4℃  | 105.8℃  |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 16 | Q103  | 65.2℃  | 86.0℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 17 | Q101  | 60.8℃  | 81.2℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 18 | C105  | 69.6℃  | 88.4℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 19 | C202  | 63.9℃  | 83.6℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 20 | C18   | 56.8℃  | 76.1℃   |                 |          |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 2  | OVER LOAD BURN-IN TEST  | NO DAMAGE<br>1 HOUR ( MIN )  | I/P : 230 VAC<br>O/P : 123 % LOAD<br>Ta : 25℃   | 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℃   | 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 45 ℃<br>NO DAMAGE   | I/P : 272 VAC<br>O/P : FULL LOAD<br>Ta=47℃<br>HUMIDITY= 95 %R.H   | TEST : OK       | P        |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |
| 5  | TEMPERATURE<br>COEFFICIENT  | ± 0.05%/℃ (0-50℃)  | I/P : 230 VAC<br>O/P : FULL LOAD  | ± 0 %/℃ (0-50℃) | P        |                           |                           |   |      |       |       |   |     |       |       |   |     |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |   |    |       |       |    |    |       |       |    |    |       |       |    |    |       |       |    |      |       |       |    |    |       |       |    |      |       |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |     |       |       |  |   |

|    |                             |   |  |   |
|----|-----------------------------|---|--|---|
| 6  | STORAGE TEMPERATURE TEST    | <ol style="list-style-type: none"> <li>1. Thermal shock Temperature : -40°C~ +85°C</li> <li>2. Temperature change rate : 25°C / MIN</li> <li>3. Dwell time low and high temperature : 30 MIN/EACH</li> <li>4. Total test cycle : 5 CYCLE</li> <li>5. Input/Output condition : STATIC</li> </ol>   | OK   | P |
| 7  | THERMAL SHOCK TEST          | <ol style="list-style-type: none"> <li>1. Thermal shock Temperature : -30°C~ +70°C</li> <li>2. Temperature change rate : 25°C / MIN</li> <li>3. Dwell time low and high temperature : 30 MIN/EACH</li> <li>4. Total test cycle : 10 CYCLE</li> <li>5. Input/Output condition : 230VAC/Full Load AC ON/OFF TEST<br/>turn on 58sec ; turn off 2sec</li> </ol> | OK   | P |
| 8  | VIBRATION TEST              | <p>1 Carton &amp; 1 Set</p> <ol style="list-style-type: none"> <li>(1) Waveform : Sine Wave</li> <li>(2) Frequency : 10-500Hz</li> <li>(3) Sweep Time : 12min/sweep cycle</li> <li>(4) Acceleration : 2G</li> <li>(5) Test Time : 60min in each axis (X.Y.Z)</li> <li>(6) Ta : 25°C</li> </ol>  | TEST : OK  | P |
| 9  | CAPACITOR LIFE CYCLE        | <p>SUPPOSE C105 IS THE MOST CRITICAL COMPONENT</p> <ol style="list-style-type: none"> <li>(1) I/P : 230VAC O/P : FULL LOAD Ta= 25°C LIFE TIME</li> <li>(2) I/P : 230VAC O/P : FULL LOAD Ta=50°C LIFE TIME</li> <li>(3) I/P : 230VAC O/P : 75% LOAD Ta= 50°C LIFE TIME</li> <li>(4) I/P : 230VAC O/P : 50% LOAD Ta= 50°C LIFE TIME</li> </ol>                | <ol style="list-style-type: none"> <li>(1) 123157HRS</li> <li>(2) 38673HRS</li> <li>(3) 85864HRS</li> <li>(4) 176678HRS</li> </ol> | P |
| 10 | MTBF                        | <p>MIL-HDBK-217F NOTICE S2 PARTS COUNT<br/>TOTAL FAILURE RATE : 288.5 KHRS</p>  |  | P |
| 11 | DMTBF/Accelerated Life Test | <p>Demonstration Mean Time Between Failure (Expected Life): Above 30,000 hours @ TA 45°C</p>  |  | P |

| SAMPLE         | TEST RESULT | TESTER | APPROVAL   |
|----------------|-------------|--------|------------|
| PRODUCT SAMPLE | PASS        | Shenym | Wangdezhao |

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