



# Test Report: EPP-500-24

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500W 5"×3" Green Open Frame 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

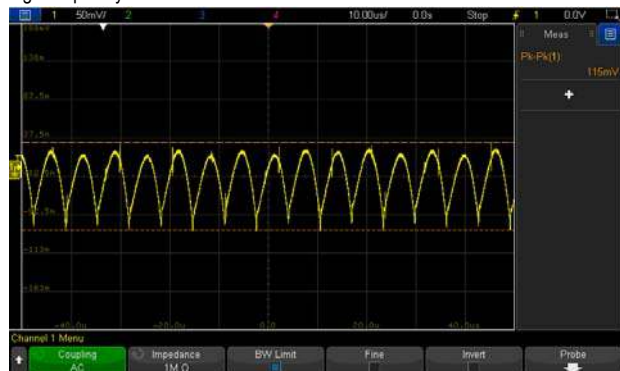
ENVIRONMENT TEST

## DESIGN VERIFY TEST

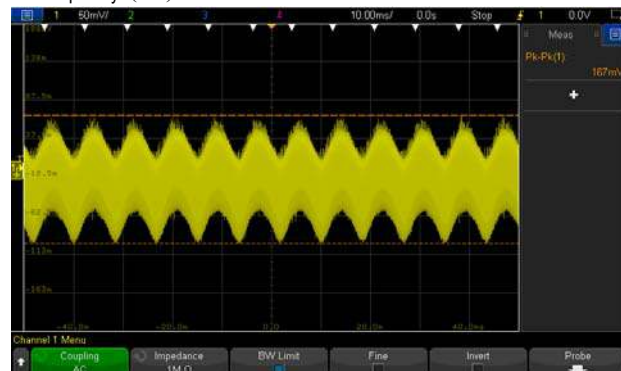
### OUTPUT FUNCTION TEST

| NO | TEST ITEM                        | SPECIFICATION     | TEST CONDITION                                      | RESULT            |
|----|----------------------------------|-------------------|-----------------------------------------------------|-------------------|
| 1  | OUTPUT VOLTAGE<br>ADJUST RANGE   | CH1: 22.8V~ 25.2V | I/P : 230 VAC<br>O/P : MIN LOAD<br>Ta : 25℃         | 22.0V~25.8V       |
| 2  | OUTPUT VOLTAGE(Max)<br>TOLERANCE | V1: -2.0%~2.0%    | I/P: 80VAC /264VAC<br>O/P:FULL/ MIN. LOAD<br>Ta:25℃ | V1 : -0.05%~0.08% |
| 3  | LINE REGULATION (Max)            | V1: -0.5%~0.5%    | I/P: 80VAC~ 264VAC<br>O/P:FULL LOAD<br>Ta:25℃       | V1 : -0.02%~0.02% |
| 4  | LOAD REGULATION(Max)             | V1: -1.0%~1.0%    | I/P: 230VAC<br>O/P:FULL ~MIN LOAD<br>Ta:25℃         | V1 : -0.05%~0.08% |
| 5  | OVER/UNDERSHOOT TEST             | < ±5%             | I/P: 230VAC<br>O/P:FULL LOAD<br>Ta:25℃              | 1.2%              |
| 6  | RIPPLE & NOISE(Max )             | V1: 200mVp-p      | I/P:230VAC<br>O/P:FULL LOAD<br>Ta:25℃               | V1: 167mVp-p      |

high frequency (V1) :



low frequency (V1) :



|   |                  |                                |                                                               |                                |
|---|------------------|--------------------------------|---------------------------------------------------------------|--------------------------------|
| 7 | SET UP TIME(Max) | 230VAC/1000ms<br>115VAC/1500ms | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25℃ | 230VAC/ 756ms<br>115VAC/ 219ms |
|---|------------------|--------------------------------|---------------------------------------------------------------|--------------------------------|

INPUT=230VAC/50HZ @ FULL LOAD

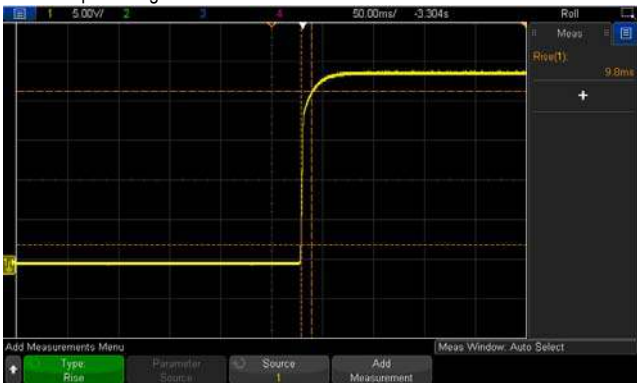
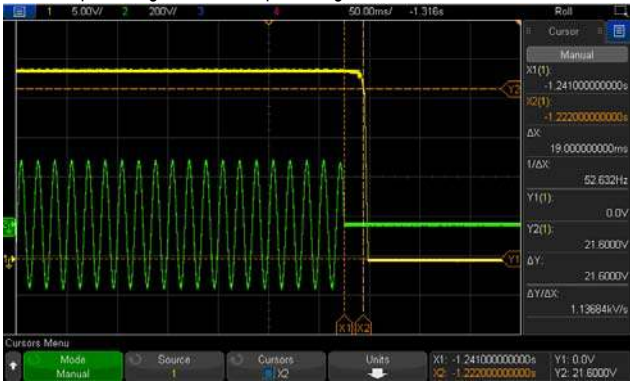
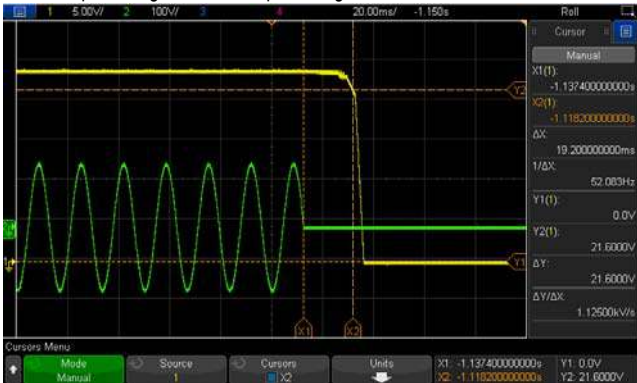
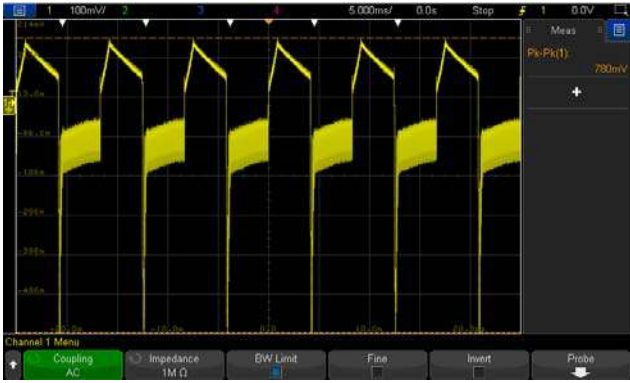
CH1 : Output Voltage CH2 : AC Input Voltage



INPUT=115VAC/60HZ @ FULL LOAD

CH1 : Output Voltage CH2 : AC Input Voltage

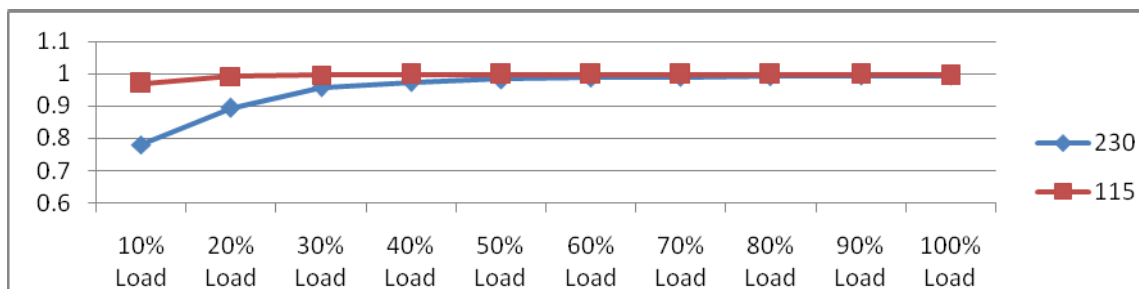


|                                                                              |                     |                                                                                      |                                                                                                         |                                        |
|------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------|
| 8                                                                            | RISE TIME (Max)     | 230VAC/30ms<br>115VAC/30ms                                                           | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                          | 230VAC/ 9.7ms<br>115VAC/ 9.8ms         |
| INPUT=230VAC/50HZ @ FULL LOAD<br>CH1 : Output Voltage                        |                     |     |                                                                                                         |                                        |
| INPUT=115VAC/60HZ @ FULL LOAD<br>CH1 : Output Voltage                        |                     |    |                                                                                                         |                                        |
| 9                                                                            | HOLD UP TIME (Typ.) | 230VAC/10ms<br>115VAC/10ms                                                           | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                          | 230VAC/ 19ms<br>115VAC/19.2 ms         |
| INPUT=230VAC/50HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage |                     |   |                                                                                                         |                                        |
| INPUT=115VAC/60HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage |                     |  |                                                                                                         |                                        |
| 10                                                                           | DYNAMIC LOAD        | V1: 2400 mVp-p                                                                       | I/P: 230VAC<br>O/P:<br>(1)FULL /50% LOAD 50%DUTY / 120HZ<br>(2)FULL /50% LOAD 50%DUTY / 1KHZ<br>Ta:25°C | (1)<br>V1: 780mVp-p<br>(2)<br>655mVp-p |
| FULL /50% LOAD 50%DUTY / 120HZ (V1)                                          |                     |   |                                                                                                         |                                        |
| FULL /50% LOAD 50%DUTY / 1KHZ (V1)                                           |                     |  |                                                                                                         |                                        |

### INPUT FUNCTION TEST

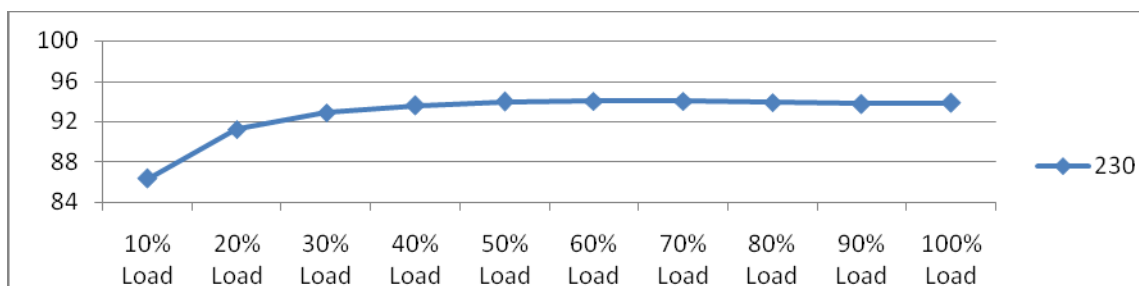
| NO | TEST ITEM                 | SPECIFICATION                 | TEST CONDITION                                                                                                                                                     | RESULT                                 |
|----|---------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 1  | INPUT VOLTAGE RANGE       | 80VAC~264VAC<br>113VDC~370VDC | I/P: TESTING<br>O/P: FULL LOAD<br>Ta: 25°C                                                                                                                         | 74V~264V                               |
|    |                           |                               | I/P:<br>LOW-LINE-3V=77 V<br>HIGH-LINE+15%=300 V<br>O/P: FULL/MIN LOAD<br>(PLEASE CHECK DERATING CURVE)<br>ON: 30 Sec OFF: 30 Sec 10MIN<br>(POWER ON/OFF NO DAMAGE) | TEST: OK                               |
| 2  | INPUT FREQUENCY RANGE     | 47HZ ~63 HZ<br>NO DAMAGE      | I/P: 80 VAC ~264 VAC<br>O/P: FULL~MIN LOAD<br>Ta: 25°C                                                                                                             | TEST: OK                               |
| 3  | INPUT CURRENT (Typ.)      | 230V/ 2.9A<br>115V/5.8A       | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                     | I = 2.32A/ 230VAC<br>I = 4.80A/ 115VAC |
| 4  | LEAKAGE CURRENT           | <0.75mA/240VAC                | I/P : 264 VAC<br>O/P : Min LOAD<br>Ta : 25°C                                                                                                                       | 0.18mA                                 |
| 5  | NO LOAD POWER CONSUMPTION | < 0.5W                        | I/P : 230 VAC<br>O/P : Min LOAD<br>Ta : 25°C                                                                                                                       | 0.42W                                  |
| 6  | POWER FACTOR (Typ.)       | 0.94/ 230VAC<br>0.98/115VAC   | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                                     | PF=0.993/230VAC<br>PF=0.998/115VAC     |

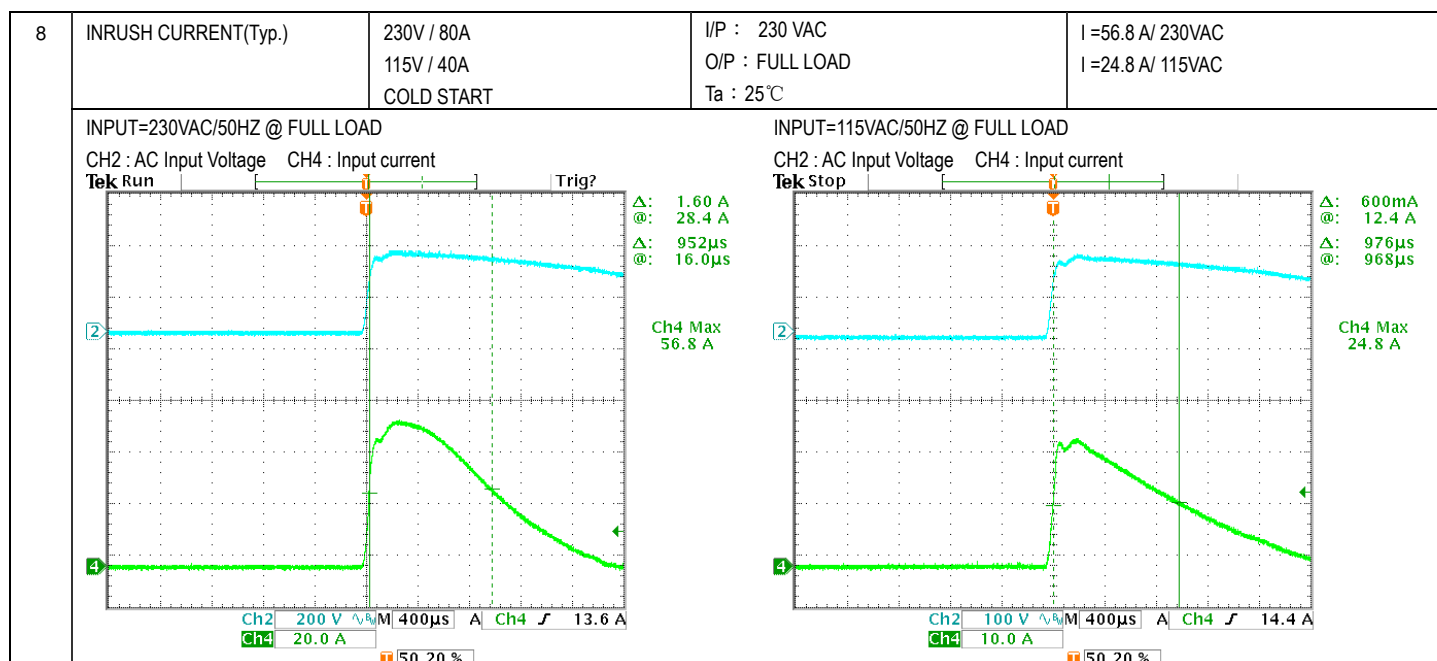
P.F vs LOAD



|   |                  |     |                                            |       |
|---|------------------|-----|--------------------------------------------|-------|
| 7 | EFFICIENCY(Typ.) | 93% | I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C | 93.8% |
|---|------------------|-----|--------------------------------------------|-------|

EFFICIENCY vs LOAD





### PROTECTION FUNCTION TEST

| NO | TEST ITEM                   | SPECIFICATION                          | TEST CONDITION                                                       | RESULT                                                                                                                                         |
|----|-----------------------------|----------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | OVER LOAD PROTECTION        | 105%~135%                              | I/P: 264VAC<br>I/P: 230VAC<br>I/P: 115VAC<br>O/P: TESTING<br>Ta:25°C | 120.1%/ 264VAC<br>120.1%/ 230VAC<br>120.0%/115VAC<br>PROTECTION TYPE :<br>Hiccup mode, recovers automatically after fault condition is removed |
| 2  | OVER VOLTAGE PROTECTION     | 26.1V~31.2V                            | I/P: 264VAC<br>I/P: 230VAC<br>I/P: 80VAC<br>O/P: MIN LOAD<br>Ta:25°C | 28.3V/ 264VAC<br>28.3V/ 230VAC<br>28.3V/ 80VACC<br>PROTECTION TYPE :<br>Shut down o/p voltage, repower on to recover                           |
| 3  | SHORT PROTECTION            | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE | I/P: 264VAC<br>I/P: 80VAC<br>O/P: FULL LOAD<br>Ta:25°C               | NO DAMAGE<br>PROTECTION TYPE :<br>Hiccup mode, recovers automatically after fault condition is removed                                         |
| 4  | OVER TEMPERATURE PROTECTION | Protection type : Shut down            | I/P: 264VAC<br>I/P: 90VAC<br>O/P: FULL LOAD                          | O.T.P. Active<br>PROTECTION TYPE :<br>Shut down o/p voltage, recovers automatically after temperature goes down                                |

### Control Function Test

| NO | TEST ITEM       | SPECIFICATION                    | TEST CONDITION                           | RESULT                  |
|----|-----------------|----------------------------------|------------------------------------------|-------------------------|
| 1  | REMOTE SENSE    | >0.3V                            | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta:25°C | 0.5V                    |
| 2  | AUXILIARY POWER | O/P:12V/0.5A<br>TOLERANCE: ± 10% | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta:25°C | TOLERANCE: -0.41%~0.32% |

|   |                    |                                                                |                                                         |                                                    |
|---|--------------------|----------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|
| 3 | AUXILIARY POWER    | O/P:5V/0.6A<br>RIPPLE & NOISE:120 mVp-p<br>TOLERANCE: ±2%      | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta:25°C                | RIPPLE & NOISE:69 mVp-p<br>TOLERANCE: -0.11%~0.12% |
| 4 | PS-ON INPUT SIGNAL | Power on: PS-ON=Hi or >2~5V<br>Power off: PS-ON=LOW or <0~0.5V | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta:25°C                | TEST : OK                                          |
| 5 | POWER GOOD         | 10ms<PG<500ms                                                  | I/P: 230VAC<br>I/P: 115VAC<br>O/P: FULL LOAD<br>Ta:25°C | 173ms/230VAC<br>149ms/115VAC                       |
| 6 | POWER FAIL         | >1ms                                                           | I/P: 230VAC<br>I/P: 115VAC<br>O/P: FULL LOAD<br>Ta:25°C | 8.0ms/230VAC<br>6.8ms/115VAC                       |

### COMPONENT STRESS TEST

| NO | TEST ITEM                                           | SPECIFICATION                                        | TEST CONDITION                                                                                                                                               | RESULT                                                                  |                                                                         |
|----|-----------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 1  | PWM Transistor<br>(D to S) or (C to E) Peak Voltage | Q5 Rated<br>: 650 V<br><br>Q6 Rated<br>: 650 V       | AC ON/OFF<br>I/P:High-Line +3V =267V<br>VDS:<br>O/P: (1)Full Load<br>(2)Output Short<br>(3) Full Load Continue<br>Ta:25°C                                    | Q5<br>VDS:<br><br>(1) 414V<br>(2) 426V<br>(3) 410V                      | Q6<br>VDS:<br><br>(1) 526V<br>(2) 530V<br>(3) 434V                      |
| 2  | PWM Transistor<br>(D to S) or (C to E) Peak Voltage | U900 Rated<br>: 725 V                                | AC ON/OFF<br>I/P:High-Line +3V =267V<br>VDS:<br>O/P: (1)Full Load<br>(2)Output Short<br>(3) Full Load Continue<br>Ta:25°C                                    | VDS:<br><br>(1) 538V<br>(2) 470V<br>(3) 538V                            |                                                                         |
| 3  | O/P MOFET                                           | Q101 Rated<br>: 80 V<br><br>Q102 Rated<br>: 80 V     | AC ON/OFF<br>I/P:High-Line +3V =267 V<br>O/P: (1)Full Load<br>(2)Output Short<br>(3) Full Load Continue<br>Ta:25°C                                           | Q101<br>VDS:<br><br>(1) 64.2V<br>(2) 15.2V<br>(3) 64.2V                 | Q102<br>VDS:<br><br>(1) 65.0V<br>(2) 16.1V<br>(3) 65.0V                 |
| 4  | Input Capacitor Voltage                             | C5 Rated<br>:270 μ / 400 V                           | I/P:High-Line +3V =267V<br>O/P: (1)Full Load input on/off<br>(2) Min load input on /Off<br>(3)Full Load /Min load Change<br>(4)Full load continue<br>Ta:25°C | (1) 397V<br>(2) 393V<br>(3) 397V<br>(4) 397 V                           |                                                                         |
| 5  | Control IC Voltage Test                             | U1 Rated<br>: 0V~ 16 V<br><br>U2 Rated<br>: 0V~ 26 V | AC ON/OFF<br>I/P:High-Line +3V =267 V<br>O/P:(1)FULL LOAD<br>(2) Output Short<br>(3)O.L.P<br>(4)O.V.P.<br>(5)NO LOAD VRmin(LOW LINE)<br>Ta:25°C              | U1<br><br>(1) 14.0V<br>(2) 14.0V<br>(3) 13.6V<br>(4) 13.8V<br>(5) 14.0V | U2<br><br>(1) 16.5V<br>(2) 16.5V<br>(3) 16.5V<br>(4) 16.4V<br>(5) 15.7V |

|   |                  |                      |                                                                                                                                                                                                              |                                              |
|---|------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 6 | P.F.C Transistor | Q1 Rated<br>: 650 V  | AC ON/OFF<br>I/P:High-Line +3V =267 V<br>O/P: (1)Full Load<br>(2)Output Short<br>(3) Full Load Continue<br>Ta:25℃                                                                                            | VDS:<br>(1) 466V<br>(2) 414V<br>(3) 450V     |
| 7 | PFC Diode        | D10 Rated<br>: 650 V | AC ON/OFF<br>I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load<br>(2)Output Short<br>(3)Dynamic Load Full Load/<br>Min. Load 90%Duty/5KHz<br>(4)Dynamic Load 100% Load/<br>Min. Load 50%Duty/120Hz<br>Ta:25℃ | (1) 429V<br>(2) 421V<br>(3) 429V<br>(4) 425V |

### SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION                                                  | TEST CONDITION                                                                     | RESULT                                                             |
|----|----------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P: 4KVAC/min<br>I/P-FG:2 KVAC/min<br>O/P-FG: 0.5KVAC/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℃ | I/P-O/P:1.36mA<br>I/P- FG:1.15 mA<br>O/P - FG:0.95 mA<br>NO DAMAGE |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ<br>I/P- FG:500VDC>100MΩ                   | I/P-O/P: 600 VDC<br>I/P- FG: 600 VDC<br>Ta:25℃                                     | I/P-O/P: 9999MΩ<br>I/P- FG: 9999MΩ<br>NO DAMAGE                    |

### E.M.C TEST

| NO | TEST ITEM                                                                                                                          | SPECIFICATION                                                                                                                                                | TEST CONDITION                                          | RESULT                                                                    |
|----|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------|
| 1  | HARMONIC                                                                                                                           | EN61000-3-2<br>CLASS A                                                                                                                                       | I/P:230VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25℃              | <input checked="" type="checkbox"/> PASS<br><input type="checkbox"/> FAIL |
| 2  | CONDUCTION                                                                                                                         | EN55032<br>Class I: CLASS B<br>CNS13438<br>Class II : CLASS A                                                                                                | I/P : 230 VAC (50HZ)<br>O/P : FULL/50% LOAD<br>Ta : 25℃ | PASS<br>Test by certified Lab                                             |
| 3  | RADIATION                                                                                                                          | EN55032/ CNS13438<br>CLASS A                                                                                                                                 | I/P : 230 VAC (50HZ)<br>O/P : FULL LOAD<br>Ta : 25℃     | PASS<br>Test by certified Lab                                             |
| 4  | E.S.D                                                                                                                              | EN61000-4-2<br><input type="checkbox"/> LIGHT INDUSTRY<br>AIR: 8KV / Contact: 4KV<br><input checked="" type="checkbox"/> INDUSTRY<br>AIR: 8KV / Contact: 4KV | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25℃       | CRITERIA A                                                                |
| 5  | E.F.T                                                                                                                              | EN61000-4-4<br><input type="checkbox"/> LIGHT INDUSTRY<br>INPUT : 1KV<br><input checked="" type="checkbox"/> INDUSTRY<br>INPUT : 2KV                         | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25℃       | CRITERIA A                                                                |
| 6  | SURGE                                                                                                                              | IEC61000-4-5<br>INDUSTRY<br>L-N : 2KV                                                                                                                        | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25℃       | CRITERIA A                                                                |
| 7  | Test by certified Lab & Test Report Prepare<br>Any contradictions of the test results, please refer to the latest EMC test report. |                                                                                                                                                              |                                                         |                                                                           |

## RELIABILITY TEST

### ENVIRONMENT TEST

| NO | TEST ITEM                                                         | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | TEST CONDITION                                                    | RESULT                 |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
|----|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------|----|----------|--------------------------|--------------------------|---|-----|--------|--------|---|----|--------|--------|---|-----|--------|--------|---|-----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|-----|--------|--------|---|----|--------|--------|---|-----|--------|--------|----|----|--------|---------|----|----|--------|---------|----|-----|--------|--------|----|----|--------|---------|----|----|---------|---------|----|----|--------|--------|----|------|---------|---------|----|------|---------|---------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|----|--------|--------|----|----|--------|--------|----|------|--------|--------|
| 1  | TEMPERATURE RISE TEST                                             | <div>MODEL : EPP-500-12</div> <div>1. ROOM AMBIENT BURN-IN : 1 HRS</div> <div>I/P : 230VAC O/P : FULL LOAD Ta= 25.9 °C</div> <div>2. HIGH AMBIENT BURN-IN : 1 HRS</div> <div>I/P : 230VAC O/P : FULL LOAD Ta= 45.1 °C</div> <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 25.9 °C</th><th>HIGH AMBIENT Ta= 45.1 °C</th></tr><tr><td>1</td><td>BD1</td><td>76.2°C</td><td>87.8°C</td></tr><tr><td>2</td><td>L1</td><td>85.9°C</td><td>97.2°C</td></tr><tr><td>3</td><td>LF3</td><td>54.9°C</td><td>71.2°C</td></tr><tr><td>4</td><td>LF1</td><td>55.2°C</td><td>69.6°C</td></tr><tr><td>5</td><td>C1</td><td>60.3°C</td><td>72.7°C</td></tr><tr><td>6</td><td>C2</td><td>55.2°C</td><td>70.3°C</td></tr><tr><td>7</td><td>D10</td><td>64.1°C</td><td>80.0°C</td></tr><tr><td>8</td><td>Q1</td><td>80.3°C</td><td>83.6°C</td></tr><tr><td>9</td><td>C33</td><td>75.0°C</td><td>90.9°C</td></tr><tr><td>10</td><td>Q5</td><td>95.5°C</td><td>107.1°C</td></tr><tr><td>11</td><td>Q6</td><td>95.5°C</td><td>107.2°C</td></tr><tr><td>12</td><td>LF2</td><td>61.8°C</td><td>79.4°C</td></tr><tr><td>13</td><td>T1</td><td>97.8°C</td><td>107.5°C</td></tr><tr><td>14</td><td>L2</td><td>101.3°C</td><td>105.9°C</td></tr><tr><td>15</td><td>C5</td><td>74.8°C</td><td>79.0°C</td></tr><tr><td>16</td><td>Q101</td><td>105.9°C</td><td>104.4°C</td></tr><tr><td>17</td><td>Q102</td><td>108.7°C</td><td>107.4°C</td></tr><tr><td>18</td><td>T900</td><td>70.6°C</td><td>84.4°C</td></tr><tr><td>19</td><td>D951</td><td>61.6°C</td><td>75.6°C</td></tr><tr><td>20</td><td>U900</td><td>75.4°C</td><td>88.9°C</td></tr><tr><td>21</td><td>C105</td><td>84.2°C</td><td>88.7°C</td></tr><tr><td>22</td><td>C106</td><td>86.6°C</td><td>91.0°C</td></tr><tr><td>23</td><td>U1</td><td>80.3°C</td><td>89.5°C</td></tr><tr><td>24</td><td>U2</td><td>84.7°C</td><td>89.7°C</td></tr><tr><td>25</td><td>TSW1</td><td>63.0°C</td><td>97.6°C</td></tr></table> |                                                                   |                        | NO | Position | ROOM AMBIENT Ta= 25.9 °C | HIGH AMBIENT Ta= 45.1 °C | 1 | BD1 | 76.2°C | 87.8°C | 2 | L1 | 85.9°C | 97.2°C | 3 | LF3 | 54.9°C | 71.2°C | 4 | LF1 | 55.2°C | 69.6°C | 5 | C1 | 60.3°C | 72.7°C | 6 | C2 | 55.2°C | 70.3°C | 7 | D10 | 64.1°C | 80.0°C | 8 | Q1 | 80.3°C | 83.6°C | 9 | C33 | 75.0°C | 90.9°C | 10 | Q5 | 95.5°C | 107.1°C | 11 | Q6 | 95.5°C | 107.2°C | 12 | LF2 | 61.8°C | 79.4°C | 13 | T1 | 97.8°C | 107.5°C | 14 | L2 | 101.3°C | 105.9°C | 15 | C5 | 74.8°C | 79.0°C | 16 | Q101 | 105.9°C | 104.4°C | 17 | Q102 | 108.7°C | 107.4°C | 18 | T900 | 70.6°C | 84.4°C | 19 | D951 | 61.6°C | 75.6°C | 20 | U900 | 75.4°C | 88.9°C | 21 | C105 | 84.2°C | 88.7°C | 22 | C106 | 86.6°C | 91.0°C | 23 | U1 | 80.3°C | 89.5°C | 24 | U2 | 84.7°C | 89.7°C | 25 | TSW1 | 63.0°C | 97.6°C |
| NO | Position                                                          | ROOM AMBIENT Ta= 25.9 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | HIGH AMBIENT Ta= 45.1 °C                                          |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 1  | BD1                                                               | 76.2°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 87.8°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 2  | L1                                                                | 85.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 97.2°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 3  | LF3                                                               | 54.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 71.2°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 4  | LF1                                                               | 55.2°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 69.6°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 5  | C1                                                                | 60.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 72.7°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 6  | C2                                                                | 55.2°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 70.3°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 7  | D10                                                               | 64.1°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 80.0°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 8  | Q1                                                                | 80.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 83.6°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 9  | C33                                                               | 75.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90.9°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 10 | Q5                                                                | 95.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 107.1°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 11 | Q6                                                                | 95.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 107.2°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 12 | LF2                                                               | 61.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 79.4°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 13 | T1                                                                | 97.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 107.5°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 14 | L2                                                                | 101.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 105.9°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 15 | C5                                                                | 74.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 79.0°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 16 | Q101                                                              | 105.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 104.4°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 17 | Q102                                                              | 108.7°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 107.4°C                                                           |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 18 | T900                                                              | 70.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 84.4°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 19 | D951                                                              | 61.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 75.6°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 20 | U900                                                              | 75.4°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 88.9°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 21 | C105                                                              | 84.2°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 88.7°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 22 | C106                                                              | 86.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 91.0°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 23 | U1                                                                | 80.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 89.5°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 24 | U2                                                                | 84.7°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 89.7°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 25 | TSW1                                                              | 63.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 97.6°C                                                            |                        |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 2  | OVER LOAD BURN-IN TEST                                            | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I/P : 230 VAC<br>O/P : 138% LOAD<br>Ta : 25°C                     | TEST : OK              |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 3  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER 2 HOUR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P : 264VAC/115VAC<br>O/P : 100 % LOAD<br>Ta= -35 °C             | TEST : OK              |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 4  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 45°C /95 %R.H<br>NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I/P : 272VAC<br>O/P : FULL LOAD<br>Ta= 45 °C<br>HUMIDITY= 95 %R.H | TEST : OK              |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | ± 0.03%/°C (0~50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | I/P : 230 VAC<br>O/P : FULL LOAD                                  | ± 0.0043 %/°C (0~50°C) |    |          |                          |                          |   |     |        |        |   |    |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |     |        |        |    |    |        |         |    |    |        |         |    |     |        |        |    |    |        |         |    |    |         |         |    |    |        |        |    |      |         |         |    |      |         |         |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |    |        |        |    |    |        |        |    |      |        |        |

|    |                          |                                                                                                                                                                                                                                                                                                               |                                                                         |
|----|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 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 : 10 CYCLE<br>5. Input/Output condition : STATIC                                                                                        | TEST : OK                                                               |
| 7  | THERMAL SHOCK TEST       | 1. Thermal shock Temperature : -35°C~ +50°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 : 16 CYCLE<br>5. Input/Output condition :<br>15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST<br>1cycle:230V/ FULL LOAD Burn In Test | TEST : OK                                                               |
| 8  | VIBRATION TEST           | 1 Carton & 1 Set<br>(1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(3) Sweep Time : 10min/sweep cycle<br>(4) Acceleration : 3G<br>(5) Test Time : 180min in each axis (X.Y.Z)<br>(6) Ta : 25°C                                                                                                       | TEST : OK                                                               |
| 9  | CAPACITOR LIFE CYCLE     | SUPPOSE C106 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME<br>(2) I/P : 230VAC O/P : FULL LOAD Ta= 45 °C LIFE TIME<br>(3) I/P : 230VAC O/P : 75% LOAD Ta= 45 °C LIFE TIME<br>(4) I/P : 230VAC O/P : 50% LOAD Ta= 45 °C LIFE TIME                                     | (1) 52730.4 HRS<br>(2) 30032.8 HRS<br>(3) 62974.8 HRS<br>(4) 159578 HRS |
| 10 | MTBF                     | Conducted by Parts Stress Analysis Prediction<br>194.1K hrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                         |                                                                         |
| 11 | Ongoing Reliability Test | I/P : 230VAC O/P : FULL LOAD TA=50°C<br>Demonstration Mean Time Between Failure : 30,000 hours                                                                                                                                                                                                                |                                                                         |

| TEST RESULT | TESTER | REVIEW | APPROVAL |
|-------------|--------|--------|----------|
| PASS        | LIUTT  |        | WANGDZ   |

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