



# Test Report: ERDN20-12

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## 20A Enclosed Type Redundancy Module

### ■ 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

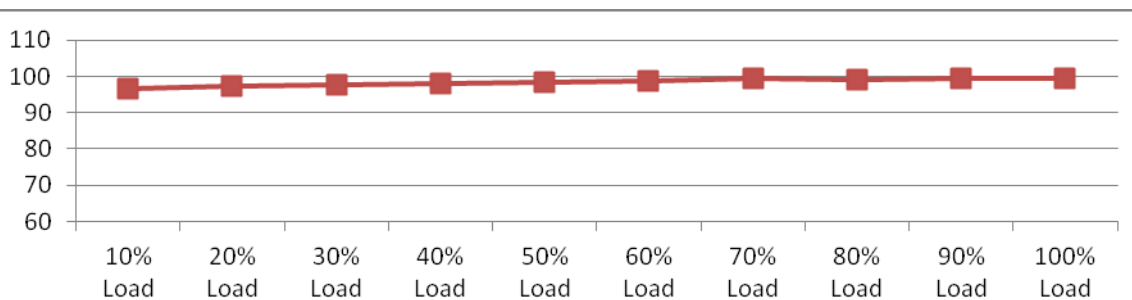
### OUTPUT FUNCTION TEST

| NO | TEST ITEM                      | SPECIFICATION         | TEST CONDITION                             | RESULT |
|----|--------------------------------|-----------------------|--------------------------------------------|--------|
| 1  | RATED CURRENT                  | 0~20A<br>CONTINUOUS   | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25℃ | OK     |
| 2  | PEAK CURRENT                   | 30A 5Sec<br>NO DAMAGE | I/P: 12VDC<br>O/P : 30A<br>Ta:25℃          | OK     |
| 3  | CAPACITANCE                    | 320uF                 | I/P : 12VDC<br>O/P : 320uF<br>Ta : 25℃     | OK     |
| 4  | STANDBY POWER LOSSES<br>(Typ.) | 1.5W                  | I/P : 12VDC<br>O/P : NO LOAD<br>Ta : 25℃   | 0.25W  |

### INPUT FUNCTION TEST

| NO | TEST ITEM                         | SPECIFICATION                              | TEST CONDITION                             | RESULT        |
|----|-----------------------------------|--------------------------------------------|--------------------------------------------|---------------|
| 1  | INPUT VOLTAGE RANGE               | 9VDC~14VDC                                 | I/P: TESTING<br>O/P: FULL LOAD<br>Ta: 25℃  | 8.55VDC~14.64 |
| 2  | RATED CURRENT                     | 0~10Ax2 input, 0~20Ax1 input<br>Continuous | I/P : 12VDC<br>O/P: 20A<br>Ta:25℃          | OK            |
| 3  | VOLTAGE DROP (Vin-Vout)<br>(max.) | 0.2V                                       | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25℃ | 0.07V         |
| 4  | PEAK CURRENT                      | 0~15Ax2 input, 0~30Ax1 5Sec<br>NO DAMAGE   | I/P: 12VDC<br>O/P : 30A<br>Ta:25℃          | OK            |
| 5  | INPUT REVERSE CURRENT<br>(max.)   | 1mA                                        | I/P : 40VDC<br>O/P : FULL LOAD<br>Ta : 25℃ | 2.78uA        |
| 6  | INPUT REVERSE VOLTAGE<br>(max.)   | 40Vdc<br>NO DAMAGE                         | I/P : 40VDC<br>O/P : FULL LOAD<br>Ta : 25℃ | OK            |
| 7  | EFFICIENCY(Typ.)                  | 98%                                        | I/P:12VDC<br>O/P:FULL LOAD<br>Ta:25℃       | 99.29 %       |

EFFICIENCY vs LOAD



### PROTECTION FUNCTION TEST

| NO | TEST ITEM            | SPECIFICATION                 | TEST CONDITION                         | RESULT    |
|----|----------------------|-------------------------------|----------------------------------------|-----------|
| 1  | OVER LOAD PROTECTION | <30A No damage<br>5 sec (max) | I/P:12VDC<br>O/P:30A<br>Ta:25℃         | NO DAMAGE |
| 2  | SHORT PROTECTION     | <30A No damage<br>5 sec (max) | I/P: 14VDC<br>O/P: FULL LOAD<br>Ta:25℃ | NO DAMAGE |

### CONTROL FUNCTION TEST

| NO | TEST ITEM                 | SPECIFICATION                                    | TEST CONDITION                         | RESULT    |
|----|---------------------------|--------------------------------------------------|----------------------------------------|-----------|
| 1  | RELAY                     | 30VDC/1A<br>RESISTIVE LOAD                       | I/P:12VDC<br>O/P:FULL LOAD<br>Ta:25℃   | TEST : OK |
| 2  | REDUNDANCY                | For 1+1 redundancy,and support<br>N+1 redundancy | I/P:12VDC<br>O/P:FULL LOAD<br>Ta:25℃   | TEST :OK  |
| 3  | BOTH INPUTS VOLTANG ALARM | <8.5V OR >14.7V ( ±5%)                           | I/P:TESTING<br>O/P:FULL LOAD<br>Ta:25℃ | TEST :OK  |
| 4  | LED STATUS DISPLAY        | GREEN LED OK                                     | I/P:12VDC<br>O/P:FULL LOAD<br>Ta:25℃   | TEST :OK  |

### COMPONENT STRESS TEST

| NO | TEST ITEM                  | SPECIFICATION                                        | TEST CONDITION                                    | RESULT                           |
|----|----------------------------|------------------------------------------------------|---------------------------------------------------|----------------------------------|
| 1  | Transistor<br>Peak Voltage | Q1 VGS Rated<br>: ±20V<br><br>Q3 VGS Rated<br>: ±20V | I/P:14VDC<br>DC ON/OFF<br>O/P:FULL LOAD<br>Ta:25℃ | Q1 VGS:14.0V<br><br>Q3 VGS:13.8V |

### SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION                                                                  | TEST CONDITION                                                                          | RESULT                                                                      |
|----|----------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1  | WITHSTAND VOLTAGE    | I/P/O/P-FG: 0.5KVAC/min<br>I/P/FG-RELAY :0.5KVAC/min<br>FG-RELAY:0.5KVAC/min   | I/P/O/P-FG: 0.6 KVAC/min<br>I/P/FG-RELAY: 0.6 KVAC/min<br>O/P-FG:0.6 KVAC/min<br>Ta:25℃ | I/P/O/P-FG:7.64mA<br>I/P/FG-RELAY:0.142mA<br>FG-RELAY:0.139m A<br>NO DAMAGE |
| 2  | ISOLATION RESISTANCE | I/P/O/P-FG:500VDC>100MΩ<br>I/P/FG-RELAY: 500VDC>100MΩ<br>FG-RELAY:500VDC>100MΩ | I/P/O/P-FG: 500 VDC<br>I/P/FG-RELAY: 500 VDC<br>FG-RELAY: 500 VDC<br>Ta:25℃             | I/P/O/P-FG: 9999MΩ<br>I/P/FG-RELAY: 9999MΩ<br>FG-RELAY:9999MΩ<br>NO DAMAGE  |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                                         | 40A / 2min<br>Ta:25℃                                                                    | 5 mΩ                                                                        |

### E.M.C TEST

| NO | TEST ITEM                                                                                                                         | SPECIFICATION                                                                                   | TEST CONDITION                                  | RESULT                                                                                |
|----|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------|
| 1  | CONDUCTION                                                                                                                        | <input checked="" type="checkbox"/> EN55032<br>CLASS B                                          | I/P : 12VDC<br>O/P : FULL/50% LOAD<br>Ta : 25°C | PASS<br>Test by certified Lab                                                         |
| 2  | RADIATION                                                                                                                         | <input checked="" type="checkbox"/> EN55032<br>CLASS B                                          | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25°C     | PASS<br>Test by certified Lab                                                         |
| 3  | E.S.D                                                                                                                             | EN61000-4-2<br>AIR: 15KV / Contact: 8KV                                                         | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25°C     | <input checked="" type="checkbox"/> CRITERIA A<br><input type="checkbox"/> CRITERIA B |
| 4  | E.F.T                                                                                                                             | EN61000-4-4<br><input checked="" type="checkbox"/> INDUSTRY<br>INPUT : 2KV                      | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25°C     | <input checked="" type="checkbox"/> CRITERIA A<br><input type="checkbox"/> CRITERIA B |
| 5  | SURGE                                                                                                                             | IEC61000-4-5<br><input checked="" type="checkbox"/> LIGHT INDUSTRY<br>L-N : 1KV<br>L,N-PE : 2KV | I/P : 12VDC<br>O/P : FULL LOAD<br>Ta : 25°C     | <input checked="" type="checkbox"/> CRITERIA A<br><input type="checkbox"/> CRITERIA B |
| 6  | 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 : ERDN20-5</div> <div>1. ROOM AMBIENT BURN-IN : 2 HRS</div> <div>I/P : 5VDC O/P : FULL LOAD Ta= 24.9 °C</div> <div>2. HIGH AMBIENT BURN-IN : 2 HRS</div> <div>I/P : 5VDC O/P : FULL LOAD Ta= 60.2 °C</div> <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 24.9 °C</th><th>HIGH AMBIENT Ta= 60.2 °C</th></tr><tr><td>1</td><td>ZNR1</td><td>44.4°C</td><td>81.0°C</td></tr><tr><td>2</td><td>C17</td><td>41.8°C</td><td>78.2°C</td></tr><tr><td>3</td><td>C15</td><td>37.3°C</td><td>73.2°C</td></tr><tr><td>4</td><td>C16</td><td>41.3°C</td><td>77.2°C</td></tr><tr><td>5</td><td>RY1</td><td>39.9°C</td><td>72.0°C</td></tr><tr><td>6</td><td>RY2</td><td>44.3°C</td><td>77.2°C</td></tr><tr><td>7</td><td>U4</td><td>34.6°C</td><td>70.3°C</td></tr><tr><td>8</td><td>Q1</td><td>42.6°C</td><td>79.5°C</td></tr><tr><td>9</td><td>Q2</td><td>54.6°C</td><td>93.7°C</td></tr><tr><td>10</td><td>Q21</td><td>36.3°C</td><td>71.9°C</td></tr><tr><td>11</td><td>Q22</td><td>38.0°C</td><td>68.9°C</td></tr><tr><td>12</td><td>R54</td><td>42.5°C</td><td>80.5°C</td></tr><tr><td>13</td><td>PCB</td><td>52.3°C</td><td>90.7°C</td></tr></table> |                                                    |           | NO | Position | ROOM AMBIENT Ta= 24.9 °C | HIGH AMBIENT Ta= 60.2 °C | 1 | ZNR1 | 44.4°C | 81.0°C | 2 | C17 | 41.8°C | 78.2°C | 3 | C15 | 37.3°C | 73.2°C | 4 | C16 | 41.3°C | 77.2°C | 5 | RY1 | 39.9°C | 72.0°C | 6 | RY2 | 44.3°C | 77.2°C | 7 | U4 | 34.6°C | 70.3°C | 8 | Q1 | 42.6°C | 79.5°C | 9 | Q2 | 54.6°C | 93.7°C | 10 | Q21 | 36.3°C | 71.9°C | 11 | Q22 | 38.0°C | 68.9°C | 12 | R54 | 42.5°C | 80.5°C | 13 | PCB | 52.3°C | 90.7°C |
| NO | Position                        | ROOM AMBIENT Ta= 24.9 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HIGH AMBIENT Ta= 60.2 °C                           |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 1  | ZNR1                            | 44.4°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 81.0°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 2  | C17                             | 41.8°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 78.2°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 3  | C15                             | 37.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 73.2°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 4  | C16                             | 41.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 77.2°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 5  | RY1                             | 39.9°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 72.0°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 6  | RY2                             | 44.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 77.2°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 7  | U4                              | 34.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 70.3°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 8  | Q1                              | 42.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 79.5°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 9  | Q2                              | 54.6°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 93.7°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 10 | Q21                             | 36.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 71.9°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 11 | Q22                             | 38.0°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 68.9°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 12 | R54                             | 42.5°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 80.5°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 13 | PCB                             | 52.3°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90.7°C                                             |           |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 2  | OVER LOAD BURN-IN TEST          | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I/P : 5 VDC<br>O/P : 115% LOAD<br>Ta : 25°C        | TEST : OK |    |          |                          |                          |   |      |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |     |        |        |    |     |        |        |    |     |        |        |    |     |        |        |
| 3  | LOW TEMPERATURE<br>TURN ON TEST | TURN ON AFTER 2 HOUR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I/P : 4.5VDC/6VDC<br>O/P : 100 % LOAD<br>Ta= -45°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 60 °C /95 %R.H<br>NO DAMAGE                                                                                                                                                                                           | I/P : 6 VDC<br>O/P : FULL LOAD<br>Ta= 60 °C<br>HUMIDITY= 95 %R.H                                                                                                                                                                                                                                              | TEST : OK                                                        |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | ± 0.03%/°C (0~60°C)                                                                                                                                                                                                                                              | I/P : 5 VDC<br>O/P : FULL LOAD                                                                                                                                                                                                                                                                                | ± 0.021%/°C (0~60°C)                                             |
| 6  | STORAGE TEMPERATURE TEST                                          | -40~85°C                                                                                                                                                                                                                                                         | 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                                                                                        |                                                                  |
| 7  | THERMAL SHOCK TEST                                                | -40~60°C                                                                                                                                                                                                                                                         | 1. Thermal shock Temperature : -45°C~ +65°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:5VDC/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST<br>1cycle:5VDC/ FULL LOAD Burn In Test |                                                                  |
| 8  | VIBRATION TEST                                                    | 10 ~ 500Hz, 5G 10min./1cycle,<br>60min. each along X, Y, Z axes                                                                                                                                                                                                  | 1 Carton & 1 Set<br>(1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(3) Sweep Time : 12min/sweep cycle<br>(4) Acceleration : 6G<br>(5) Test Time : 180min in each axis (X.Y.Z)<br>(6) Ta : 25°C                                                                                                       |                                                                  |
| 9  | CAPACITOR<br>LIFE CYCLE                                           | SUPPOSE C17 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 5VDC O/P : FULL LOAD Ta= 25 °C LIFE TIME<br>(2) I/P : 5VDC O/P : FULL LOAD Ta= 60 °C LIFE TIME<br>(3) I/P : 5VDC O/P : 75% LOAD Ta= 60 °C LIFE TIME<br>(4) I/P : 5VDC O/P : 50% LOAD Ta= 60 °C LIFE TIME |                                                                                                                                                                                                                                                                                                               | (1) 555389 HRS<br>(2) 45486HRS<br>(3) 72372 HRS<br>(4) 96159 HRS |
| 10 | MTBF                                                              | Conducted by Parts Stress Analysis Prediction<br>618.15K hrs min. Telcordia SR-332 (Bellcore) ; 378.72K hrs min. MIL-HDBK-217F (25°C)                                                                                                                            |                                                                                                                                                                                                                                                                                                               |                                                                  |
| 11 | Ongoing Reliability Test                                          | I/P : 5VDC O/P : FULL LOAD TA=50°C<br>Demonstration Mean Time Between Failure : 30000 hours                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                               |                                                                  |

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

2018.4.30 GP-A50-F010