



# Test Report: IDPC-25-500

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25W Constant Current Mode LED Driver

## ■ DESIGN VERIFY TEST

Output Function Test  
Input Function Test  
Protection 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

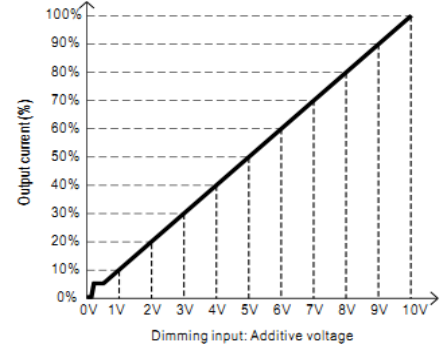
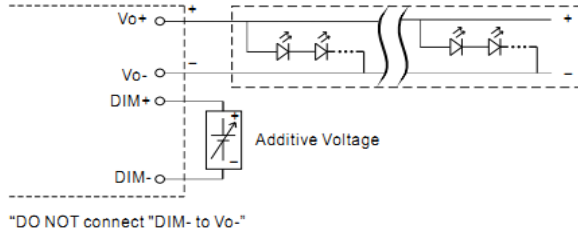
| NO   | TEST ITEM                         | SPECIFICATION                                | TEST CONDITION   | RESULT                       |
|--|-----------------------------------|--|--|------------------------------|
| 1  | CONSTANT CURRENT REGION           | 35V~50V                                      | I/P: 230VAC<br>O/P: LED MODE<br>Ta: 25°C                   | 15V~50V                      |
| 2  | CURRENT RIPPLE                    | 5% max@rated current                         | I/P: 230VAC<br>O/P: FULL/MIN LOAD<br>Ta: 25°C              | 1.8%                         |
| 3  | CURRENT TOLERANCE                 | ±7%  | I/P: 230VAC<br>O/P: FULL/MIN LOAD<br>Ta: 25°C              | 1.0%                         |
| 4  | OPEN CIRCUIT VOLTAGE (max)        | 75V  | I/P: 230VAC<br>O/P: NO LOAD<br>Ta: 25°C                    | 65.68V                       |
| 5  | OVER/UNDERSHOOT TEST              | <±5 %  | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta: 25°C                  | ±1.626%                      |
| 6  | SET UP TIME                       | 500ms/230VAC<br>1200ms/115VAC                | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P: FULL LOAD<br>Ta: 25°C | 394ms/230VAC<br>430ms/115VAC |
| <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1: Output Voltage CH2: AC Input Voltage</p> <p>Δ: 295 V<br/>@: -5.00 V<br/>Δ: 394ms<br/>@: -368ms</p> <p>Ch1 10.0 V Ch2 250 V 100ms A Ch1 40.0 V</p> </div> <div style="width: 45%;"> <p>INPUT=115VAC/60HZ @ FULL LOAD</p> <p>CH1: Output Voltage CH2: AC Input Voltage</p> <p>Δ: 270 V<br/>@: 120 V<br/>Δ: 430ms<br/>@: -404ms</p> <p>Ch1 10.0 V Ch2 250 V 100ms A Ch1 40.0 V</p> </div> </div> |                                   |  |  |                              |
| 7  | AUXILIARY DC OUTPUT (A-Type only) | Nominal 12V ( deviation 11.4~12.6 )<br>@50mA | I/P: 230 VAC<br>O/P:FULL LOAD                              | 11.899V                      |

8 DIMMING TEST

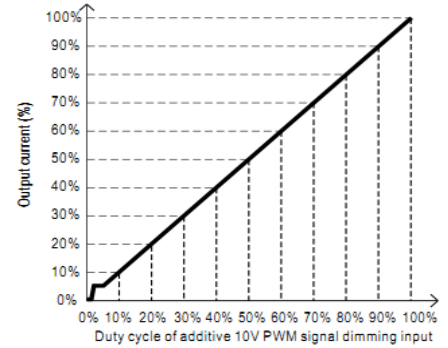
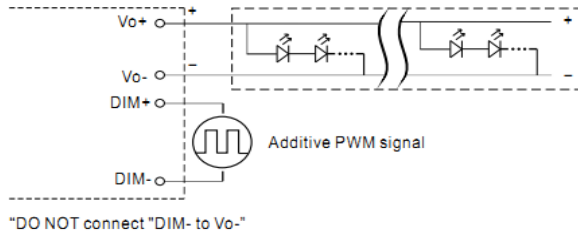
SPEC:

- Output constant current level can be adjusted by applying one of the two methodologies between DIM+ and DIM-: 0 ~ 10Vdc, or 10V PWM signal.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.

© Applying additive 0 ~ 10VDC



© Applying additive 10V PWM signal (frequency range 300Hz ~ 3KHz):



- Note : 1. Min. dimming level is about 8% and the output current is not defined when  $0% < I_{out} < 8%$ .  
 2. The output current could drop down to 0% when dimming input is about 0Vdc or 10V PWM signal with 0% duty cycle.

I/P: 230 VAC

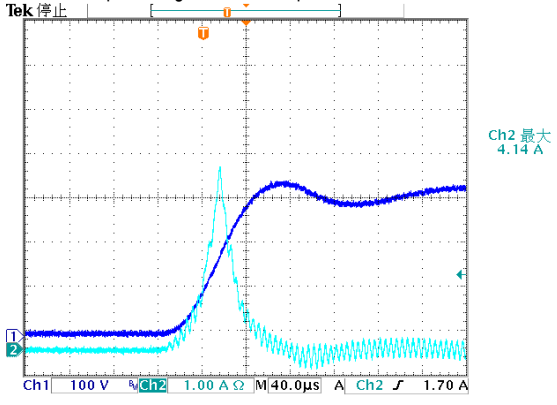
O/P: DIMMING TEST

Ta: 25°C

|   | Dimming voltage             | 0V    | 1V     | 2V     | 3V     | 4V     | 5V     | 6V     | 7V     | 8V     | 9V     | 10V     |
|---|-----------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1 | Output Current              | 0A    | 0.047A | 0.101A | 0.150A | 0.203A | 0.255A | 0.310A | 0.362A | 0.412A | 0.465A | 0.516A  |
|   | Percentage of rated current | 0.00% | 9.40%  | 20.20% | 30.00% | 40.60% | 51.00% | 62.00% | 72.40% | 82.40% | 93.00% | 103.20% |
|   | Dimming Duty cycle          | 0%    | 10%    | 20%    | 30%    | 40%    | 50%    | 60%    | 70%    | 80%    | 90%    | 100%    |
| 2 | Output Current              | 0A    | 0.047A | 0.100A | 0.153A | 0.206A | 0.258A | 0.312A | 0.364A | 0.417A | 0.469A | 0.521A  |
|   | Percentage of rated current | 0.00% | 9.40%  | 20.00% | 30.60% | 41.20% | 51.60% | 62.40% | 72.80% | 83.40% | 93.80% | 104.20% |

TEST RESULT: OK

INPUT FUNCTION TEST

| NO   | TEST ITEM                 | SPECIFICATION  | TEST CONDITION  | RESULT  |
|--|---------------------------|--|---|---|
| 1  | INPUT VOLTAGE RANGE       | 90VAC~295VAC   | I/P: TESTING<br>O/P: FULL LOAD<br>Ta: 25°C  | 87V~295V  |
|  |                           |  | I/P:<br>(1)LOW-LINE-3V=87 V<br>HIGH-LINE+10V=305 V<br>O/P: FULL/MIN LOAD<br>ON: 30 Sec OFF: 30 Sec 10MIN<br>(2)230VAC<br>ON: 0.5 Sec OFF: 0.5 Sec 20MIN<br>( POWER ON/OFF NO DAMAGE ) | TEST: OK  |
| 2  | INPUT FREQUENCY RANGE     | 47HZ ~63 HZ<br>NO DAMAGE   | I/P: 90 VAC ~295 VAC<br>O/P: FULL~MIN LOAD<br>Ta: 25°C  | TEST: OK  |
| 3  | AC CURRENT                | 0.4A/115VAC<br>0.16A/230VAC<br>0.13A/277VAC                        | I/P: 115 VAC<br>I/P: 230 VAC<br>I/P: 277 VAC<br>O/P: FULL LOAD<br>Ta: 25°C  | I =0.286A/ 115VAC<br>I =0.145A/ 230VAC<br>I =0.126A/ 277VAC |
| 4  | LEAKAGE CURRENT           | < 0.75mA / 277VAC  | I/P: 277 VAC<br>O/P: NO LOAD<br>Ta: 25°C  | L-CASE: 0.0029 mA<br>N-CASE: 0.0031 mA                      |
| 5  | NO LOAD POWER CONSUMPTION | < 0.5W for Blank-Type<br>< 1.2W for A-Type                         | I/P: 230VAC<br>O/P: NO LOAD<br>Ta: 25°C   | 0.458W for Blank-Type<br>0.5237W for A-Type                 |
| 6  | INRUSH CURRENT(Typ)       | 230V/ 30A<br>Twidth =100 us measured at 50%<br>Ipeak<br>COLD START | I/P: 230 VAC<br>O/P: FULL LOAD<br>Ta: 25°C  | I =4.14A/ 230VAC<br>Twidth =24.8us                          |
| <p>INPUT=230VAC/50HZ @ FULL LOAD</p> <p>CH1: AC Input Voltage CH2: Input current</p>  <p>Ch2 最大 4.14 A</p> <p>37.8000µs</p> |                           |  |   |   |
| 7  | EFFICIENCY(Typ)           | 81.5%  | I/P: 230VAC<br>O/P: FULL LOAD<br>Ta: 25°C   | 83.60%  |

|      | <p><b>EFFICIENCY vs LOAD</b></p> <table border="1"> <caption>Efficiency vs Load Data</caption> <thead> <tr> <th>LOAD</th> <th>277V (%)</th> <th>230V (%)</th> <th>115V (%)</th> </tr> </thead> <tbody> <tr> <td>70%</td> <td>77</td> <td>79</td> <td>81</td> </tr> <tr> <td>80%</td> <td>79</td> <td>81</td> <td>82.5</td> </tr> <tr> <td>90%</td> <td>81</td> <td>82.5</td> <td>83.5</td> </tr> <tr> <td>100%</td> <td>82.5</td> <td>83.5</td> <td>84</td> </tr> </tbody> </table> |   |  | LOAD | 277V (%) | 230V (%) | 115V (%) | 70% | 77    | 79    | 81    | 80% | 79    | 81   | 82.5  | 90% | 81    | 82.5  | 83.5  | 100% | 82.5 | 83.5  | 84    |
|------|---|---|--|------|----------|----------|----------|-----|-------|-------|-------|-----|-------|------|-------|-----|-------|-------|-------|------|------|-------|-------|
| LOAD | 277V (%)  | 230V (%)  | 115V (%)   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 70%  | 77  | 79  | 81   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 80%  | 79  | 81  | 82.5   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 90%  | 81  | 82.5  | 83.5   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 100% | 82.5  | 83.5  | 84   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 8    | <p><b>POWER FACTOR</b></p> <p>0.95/ 115VAC<br/>0.92/ 230VAC<br/>0.90/ 277VAC</p>  | <p>I/P: 115 VAC<br/>I/P: 230 VAC<br/>I/P: 277 VAC<br/>O/P: FULL LOAD<br/>Ta: 25°C</p>         | <p>PF=0.985/ 115VAC<br/>PF=0.969/ 230VAC<br/>PF=0.945/ 277VAC</p>                                    |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
|      | <p><b>P.F vs LOAD</b></p> <table border="1"> <caption>P.F vs Load Data</caption> <thead> <tr> <th>LOAD</th> <th>277V</th> <th>230V</th> <th>115V</th> </tr> </thead> <tbody> <tr> <td>70%</td> <td>0.915</td> <td>0.955</td> <td>0.985</td> </tr> <tr> <td>80%</td> <td>0.925</td> <td>0.96</td> <td>0.985</td> </tr> <tr> <td>90%</td> <td>0.935</td> <td>0.965</td> <td>0.985</td> </tr> <tr> <td>100%</td> <td>0.94</td> <td>0.965</td> <td>0.985</td> </tr> </tbody> </table>   |   |  | LOAD | 277V     | 230V     | 115V     | 70% | 0.915 | 0.955 | 0.985 | 80% | 0.925 | 0.96 | 0.985 | 90% | 0.935 | 0.965 | 0.985 | 100% | 0.94 | 0.965 | 0.985 |
| LOAD | 277V  | 230V  | 115V   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 70%  | 0.915   | 0.955   | 0.985  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 80%  | 0.925   | 0.96  | 0.985  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 90%  | 0.935   | 0.965   | 0.985  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 100% | 0.94  | 0.965   | 0.985  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 9    | <p><b>TOTAL HARMONIC DISTORTION</b></p> <p>THD &lt; 20%<br/>(@load ≥ 70%/115VAC, 230VAC;<br/>@load ≥ 75%/277VAC)</p>  | <p>I/P: 115 VAC/70% LOAD<br/>I/P: 230 VAC/70% LOAD<br/>I/P: 277 VAC/75% LOAD<br/>Ta: 25°C</p> | <p>THD=8.77% @70% load /115VAC<br/>THD=11.99% @70% load /230VAC<br/>THD=15.60% @75% load /277VAC</p> |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
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| LOAD | 277V (%)  | 230V (%)  | 115V (%)   |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 70%  | 16.6  | 12.0  | 8.8  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 80%  | 15.2  | 11.5  | 8.5  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 90%  | 14.2  | 11.0  | 8.2  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |
| 100% | 13.8  | 10.8  | 9.5  |      |          |          |          |     |       |       |       |     |       |      |       |     |       |       |       |      |      |       |       |

**PROTECTION FUNCTION TEST**

| NO | TEST ITEM                | SPECIFICATION                          | TEST CONDITION  | RESULT  |
|----|--------------------------|--|---|---|
| 1  | SHORT CIRCUIT PROTECTION | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE | I/P: 90VAC<br>I/P: 295VAC<br>O/P: FULL LOAD<br>Ta: 25°C | NO DAMAGE<br>Hiccup mode, recovers automatically after fault condition is removed |

**COMPONENT STRESS TEST**

| NO | TEST ITEM            | SPECIFICATION         | TEST CONDITION   | RESULT                           |
|----|----------------------|-----------------------|--|----------------------------------|
| 1  | PWM Power Transistor | Q 1 Rated<br>7A/800V  | I/P: High-Line +3V =298V<br>O/P: (1) Full Load Turn on<br>(2) Output Short<br>(3) Full load continue<br>Ta: 25°C | (1) 574V<br>(2) 562V<br>(3) 576V |
| 2  | O/P Diode (MOSFET)   | D100 Rated<br>5A/600V | I/P: High-Line +3V =298V<br>O/P: (1) Full Load Turn on<br>(2) Output Short<br>(3) Full load continue<br>Ta: 25°C | (1) 331V<br>(2) 329V<br>(3) 332V |
| 3  | Control IC           | U1 Rated<br>35V       | I/P: High-Line +3V =298V<br>O/P: (1) FULL LOAD<br>(2) Output Short<br>(3) Low Line No Load<br>Ta: 25°C           | (1) 14V<br>(2) 11.2V<br>(3) 14V  |
| 4  | Clamp Diode          | D 1 Rated<br>1A/1KV   | I/P: High-Line +3V = 298V<br>O/P: (1) Full Load input on/off<br>(2) Output Short<br>Ta: 25°C                     | (1) 538V<br>(2) 534V             |

**SAFETY TEST**

| NO | TEST ITEM            | SPECIFICATION         | TEST CONDITION                      | RESULT                        |
|----|----------------------|-----------------------|-------------------------------------|-------------------------------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P: 3.75KVAC/min | I/P-O/P: 4.2 KVAC/min<br>Ta: 25°C   | I/P-O/P: 1.824mA<br>NO DAMAGE |
| 2  | ISOLATION RESISTANCE | I/P-O/P: 500VDC>100MΩ | I/P-O/P: 500 VDC<br>Ta: 25°C/70% RH | I/P-O/P: >9999MΩ              |

**E.M.C TEST**

| NO | TEST ITEM                                   | SPECIFICATION   | TEST CONDITION                                      | RESULT |
|----|---|---|---|--------|
| 1  | HARMONIC                                    | EN61000-3-2<br>CLASS C                                    | I/P: 230 VAC/50HZ<br>O/P: FULL/70% LOAD<br>Ta: 25°C | PASS   |
| 2  | CONDUCTION                                  | EN55015   | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C     | PASS   |
| 3  | RADIATION                                   | EN55015   | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C     | PASS   |
| 4  | E.S.D                                       | EN61000-4-2<br>LIGHT INDUSTRY<br>AIR: 8KV<br>Contact: 4KV | I/P: 230 VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C     | PASS   |
| 5  | E.F.T                                       | EN61000-4-4<br>LIGHT INDUSTRY<br>INPUT: 1KV               | I/P: 230VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C      | PASS   |
| 6  | SURGE                                       | EN61000-4-5<br>LIGHT INDUSTRY<br>L-N: 1KV                 | I/P: 230VAC/50HZ<br>O/P: FULL LOAD<br>Ta: 25°C      | PASS   |
| 7  | Test by certified Lab & Test Report Prepare |   |   |        |

■ **RELIABILITY TEST**

**ENVIRONMENT TEST**

| NO | TEST ITEM   | SPECIFICATION  | TEST CONDITION   | RESULT     |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
|----|---|--|--|------------|----|----------|-------------------------|------------------------|---|-----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|-----|--------|--------|---|----|--------|--------|---|----|--------|--------|---|----|--------|--------|----|----|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|
| 1  | TEMPERATURE RISE TEST   | MODEL: IDPC-25-500<br>1. ROOM AMBIENT BURN-IN: 2 HRS<br>I/P: 230VAC O/P: FULL LOAD Ta= 33.3°C<br>2. HIGH AMBIENT BURN-IN: 2 HRS<br>I/P: 230VAC O/P: FULL LOAD Ta= 50.2°C   |  |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
|    |   | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 33.3°C</th> <th>HIGH AMBIENT Ta=50.2°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF2</td><td>50.4°C</td><td>66.8°C</td></tr> <tr><td>2</td><td>L2</td><td>51.3°C</td><td>73.4°C</td></tr> <tr><td>3</td><td>C8</td><td>58.0°C</td><td>83.7°C</td></tr> <tr><td>4</td><td>R6</td><td>68.1°C</td><td>91.1°C</td></tr> <tr><td>5</td><td>Q1</td><td>74.9°C</td><td>89.8°C</td></tr> <tr><td>6</td><td>C20</td><td>74.9°C</td><td>84.8°C</td></tr> <tr><td>7</td><td>U1</td><td>69.4°C</td><td>88.4°C</td></tr> <tr><td>8</td><td>D1</td><td>72.8°C</td><td>87.5°C</td></tr> <tr><td>9</td><td>D2</td><td>72.7°C</td><td>91.6°C</td></tr> <tr><td>10</td><td>T1</td><td>77.1°C</td><td>98.9°C</td></tr> <tr><td>11</td><td>D100</td><td>84.6°C</td><td>90.9°C</td></tr> <tr><td>12</td><td>Q100</td><td>75.7°C</td><td>88.8°C</td></tr> <tr><td>13</td><td>R140</td><td>73.8°C</td><td>90.1°C</td></tr> <tr><td>14</td><td>U100</td><td>75.3°C</td><td>83.0°C</td></tr> <tr><td>15</td><td>D200</td><td>68.4°C</td><td>84.0°C</td></tr> <tr><td>16</td><td>D300</td><td>68.2°C</td><td>78.9°C</td></tr> <tr><td>17</td><td>C110</td><td>58.5°C</td><td>84.7°C</td></tr> </tbody> </table> |  |            | NO | Position | ROOM AMBIENT Ta= 33.3°C | HIGH AMBIENT Ta=50.2°C | 1 | LF2 | 50.4°C | 66.8°C | 2 | L2 | 51.3°C | 73.4°C | 3 | C8 | 58.0°C | 83.7°C | 4 | R6 | 68.1°C | 91.1°C | 5 | Q1 | 74.9°C | 89.8°C | 6 | C20 | 74.9°C | 84.8°C | 7 | U1 | 69.4°C | 88.4°C | 8 | D1 | 72.8°C | 87.5°C | 9 | D2 | 72.7°C | 91.6°C | 10 | T1 | 77.1°C | 98.9°C | 11 | D100 | 84.6°C | 90.9°C | 12 | Q100 | 75.7°C | 88.8°C | 13 | R140 | 73.8°C | 90.1°C | 14 | U100 | 75.3°C | 83.0°C | 15 | D200 | 68.4°C | 84.0°C | 16 | D300 | 68.2°C | 78.9°C | 17 | C110 | 58.5°C | 84.7°C |
| NO | Position  | ROOM AMBIENT Ta= 33.3°C  | HIGH AMBIENT Ta=50.2°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 1  | LF2   | 50.4°C   | 66.8°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 2  | L2  | 51.3°C   | 73.4°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 3  | C8  | 58.0°C   | 83.7°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 4  | R6  | 68.1°C   | 91.1°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 5  | Q1  | 74.9°C   | 89.8°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 6  | C20   | 74.9°C   | 84.8°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 7  | U1  | 69.4°C   | 88.4°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 8  | D1  | 72.8°C   | 87.5°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 9  | D2  | 72.7°C   | 91.6°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 10 | T1  | 77.1°C   | 98.9°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 11 | D100  | 84.6°C   | 90.9°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 12 | Q100  | 75.7°C   | 88.8°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 13 | R140  | 73.8°C   | 90.1°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 14 | U100  | 75.3°C   | 83.0°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 15 | D200  | 68.4°C   | 84.0°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 16 | D300  | 68.2°C   | 78.9°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 17 | C110  | 58.5°C   | 84.7°C   |            |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 2  | LOW TEMPERATURE TURN ON TEST                                      | TURN ON AFTER 2 HOUR   | I/P: 295VAC/90VAC<br>O/P: FULL/80% LOAD<br>Ta= -25°C           | TEST: OK   |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 3  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 50 °C<br>NO DAMAGE  | I/P: 305VAC<br>O/P: FULL LOAD<br>Ta=50 °C<br>HUMIDITY= 95 %R.H | TEST: OK   |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 4  | TEMPERATURE COEFFICIENT   | ±0.03 %/°C(0~50°C)   | I/P: 230 VAC<br>O/P: FULL LOAD                                 | 0.0093%/°C |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 5  | STORAGE TEMPERATURE TEST  | 1. Thermal shock Temperature: -45°C~ +85°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle: 5 CYCLE<br>5. Input/Output condition: AC OFF STATIC  |  | TEST: OK   |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |
| 6  | THERMAL SHOCK TEST  | 1. Thermal shock Temperature: -25°C~ +55°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: 230VAC/Full Load AC ON/OFF TEST<br>AC on 3 sec/AC off 1 sec TEST  |  | TEST: OK   |    |          |                         |                        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |    |        |        |   |     |        |        |   |    |        |        |   |    |        |        |   |    |        |        |    |    |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |    |      |        |        |





|    |                             |   |  |
|----|-----------------------------|---|--|
| 7  | VIBRATION TEST              | 1 Carton & 1 Set<br>(1) Waveform: Sine Wave<br>(2) Frequency: 10~500Hz<br>(3) Sweep Time: 10min/sweep cycle<br>(4) Acceleration: 2G<br>(5) Test Time: 60min in each axis (X.Y.Z)<br>(6) Ta: 25°C                          | TEST: OK   |
| 8  | CAPACITOR LIFE CYCLE        | IDPC-25-500: 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= 50 °C LIFE TIME<br>(3) I/P: 230VAC O/P: 75% LOAD Ta= 50 °C LIFE TIME | (1) 469876 HRS<br>(2) 77738.4 HRS<br>(3) 89052 HRS |
| 9  | MTBF                        | Conducted by Parts Stress Analysis Prediction<br>4394.6K hrs min. Telcordia SR-332 (Bellcore) ; 1093.3K hrs min. MIL-HDBK-217F (25°C)   |  |
| 10 | DMTBF/Accelerated Life Test | Demonstration Mean Time Between Failure(Expected Life) :<br>30,000 hours @ Ta 50°C  |  |

| TEST RESULT | TESTER        | REVIEW | APPROVAL |
|-------------|---------------|--------|----------|
| PASS        | CHENZH/ZHUOKB | SKY    | LIUWY    |