



# Test Report: HRPG-200-24

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200W Single Output with PFC Function

## ■ DESIGN VERIFY TEST

Output Function Test  
Input Function Test  
Protection Function Test  
Control Function Test  
Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test  
E.M.C. Test

## ■ RELIABILITY TEST

ENVIRONMENT TEST

## DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

| NO | TEST ITEM                   | SPECIFICATION                                   | TEST CONDITION  | RESULT   | VERDICT |
|----|-----------------------------|---|---|--|---------|
| 1  | RIPPLE & NOISE              | V1 : 150 mVp-p (Max)                            | I/P : 230VAC<br>O/P : FULL LOAD<br>Ta : 25°C                        | V1 : 113 mVp-p (Max)                                   | P       |
| 2  | OUTPUT VOLTAGE ADJUST RANGE | CH1 : 21.6 V ~28.8 V                            | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C       | 20.25 V~ 30.38 V/ 230 VAC<br>20.24 V~ 30.38 V/ 115 VAC | P       |
| 3  | OUTPUT VOLTAGE TOLERANCE    | V1 : 1%~ -1% (Max)                              | I/P : 100 VAC / 264 VAC<br>O/P : FULL/ MIN LOAD<br>Ta : 25°C        | V1 : 0.06 %~ -0.06 %                                   | P       |
| 4  | LINE REGULATION             | V1 : 0.2%~ -0.2% (Max)                          | I/P : 100VAC ~ 264 VAC<br>O/P : FULL LOAD<br>Ta : 25°C              | V1 : 0 %~ 0 %  | P       |
| 5  | LOAD REGULATION             | V1 : 0.5% ~ -0.5% (Max)                         | I/P : 230 VAC<br>O/P : FULL ~MIN LOAD<br>Ta : 25°C                  | V1 : 0.05 %~ -0.05 %                                   | P       |
| 6  | SET UP TIME                 | 230VAC : 1000 ms (Max)<br>115VAC : 2500 ms(Max) | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C      | 230VAC/ 110 ms<br>115VAC/ 220 ms                       | P       |
| 7  | RISE TIME                   | 230VAC : 50 ms (Max)<br>115VAC : 50 ms (Max)    | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C      | 230VAC/ 7.5 ms<br>115VAC/ 7.5 ms                       | P       |
| 8  | HOLD UP TIME                | 230VAC : 16 ms (TYP)<br>115VAC : 16 ms (TYP)    | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C      | 230VAC/ 44 ms<br>115VAC/ 36 ms                         | P       |
| 9  | OVER/UNDERSHOOT TEST        | < ±5%   | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                       | TEST : < 5 %   | P       |
| 10 | DYNAMIC LOAD                | V1 : 2400 mVp-p                                 | I/P : 230 VAC<br>O/P : FULL /Min LOAD 90%DUTY/<br>1KHZ<br>Ta : 25°C | 609 mVp-p  | P       |

## INPUT FUNCTION TEST

| NO | TEST ITEM                 | SPECIFICATION                                      | TEST CONDITION   | RESULT                                     | VERDICT |
|----|---------------------------|--|--|--|---------|
| 1  | INPUT VOLTAGE RANGE       | 85VAC~264 VAC                                      | I/P : TESTING<br>O/P : FULL LOAD<br>Ta : 25°C<br><br>I/P :<br>LOW-LINE-3V= 82 V<br>HIGH-LINE+15%=300 V<br>O/P : FULL/MIN LOAD<br>ON : 30 Sec . OFF : 30 Sec 10MIN<br>( AC POWER ON/OFF NO DAMAGE ) | 70 V~264V<br><br>TEST : OK                 | P       |
| 2  | INPUT FREQUENCY RANGE     | 47HZ ~63 HZ<br>NO DAMAGE OSC                       | I/P : 85 VAC ~ 264 VAC<br>O/P : FULL~MIN LOAD<br>Ta : 25°C   | TEST : OK                                  | P       |
| 3  | POWER FACTOR              | 0.95 / 230 VAC(TYP)<br>0.99 / 115 VAC(TYP)         | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | PF= 0.96 / 230 VAC<br>PF= 0.998 / 115 VAC  | P       |
| 4  | EFFICIENCY                | 88 % (TYP)   | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C  | 88.9 %                                     | P       |
| 5  | INPUT CURRENT             | 230V/ 1.1 A (TYP)<br>115V/ 2.2 A (TYP)             | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | I = 1.04 A/ 230 VAC<br>I = 2.04 A/ 115 VAC | P       |
| 6  | INRUSH CURRENT            | 230V/ 70 A (TYP)<br>115V/ 35 A (TYP)<br>COLD START | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : FULL LOAD<br>Ta : 25°C   | I = 68 A/ 230 VAC<br>I = 34 A/ 115 VAC     | P       |
| 7  | LEAKAGE CURRENT           | < 1 mA / 240 VAC                                   | I/P : 264 VAC<br>O/P : Min LOAD<br>Ta : 25°C   | L-FG : 0.58 mA<br>N-FG : 0.32 mA           | P       |
| 8  | NO LOAD POWER CONSUMPTION | < 0.5W   | I/P : 240 VAC<br>O/P : NO LOAD<br>RC+/RC- SHORT<br>Ta : 25°C   | 0.29 W                                     | P       |

## PROTECTION FUNCTION TEST

| NO | TEST ITEM                                 | SPECIFICATION   | TEST CONDITION  | RESULT   | VERDICT |
|----|---|---|---|--|---------|
| 1  | OVER LOAD PROTECTION                      | 105 %~ 135 %  | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : TESTING<br>Ta : 25°C  | 124 %/ 230 VAC<br>124 %/ 115 VAC<br>Constant current limiting,<br>recovers automatically after<br>fault condition is removed | P       |
| 2  | OVER VOLTAGE PROTECTION                   | CH1 : 30 V~ 34.8 V  | I/P : 230 VAC<br>I/P : 115 VAC<br>O/P : MIN LOAD<br>Ta : 25°C | 33.27 V/ 230 VAC<br>33.27 V/ 115 VAC<br>Shut down Re- power ON   | P       |
| 3  | OVER TEMPERATURE PROTECTION<br>(optional) | SPEC :<br>TSW1 : 95 ± 5°C O.T.P.<br>TSW1 : detect on heatsink<br>of power transistor<br>NO DAMAGE | I/P : 230 VAC<br>O/P : FULL LOAD                              | O.T.P. Active<br>Shut down o/p voltage · recovers<br>automatically after temperature<br>goes down                            | P       |
| 4  | SHORT PROTECTION                          | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE  | I/P : 264 VAC<br>O/P : FULL LOAD<br>Ta : 25°C                 | NO DAMAGE<br>Hiccup Mode   | P       |

## CONTROL FUNCTION TEST

| NO | TEST ITEM      | SPECIFICATION  | TEST CONDITION                                | RESULT                                       | VERDICT |
|----|----------------|--|---|--|---------|
| 1  | REMOTE CONTROL | Rc+ / Rc-<br>0 V~ 0.8 V POWER OFF<br>4 V~ 10V POWER ON   | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | 0 V~ 2.5 V POWER ON<br>2.6 V~ 10 V POWER OFF | P       |
| 2  | 5V STANDBY     | 5VSB : 5V@0.3A ; tolerance<br>±5%, ripple : 50mVp-p(max) | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | 5VSB : 4.876 V / 0.3A<br>Ripple : 16 mV      | P       |
| 3. | Remote Sense   | >0.5V  | I/P : 230 VAC<br>O/P : FULL LOAD<br>Ta : 25°C | ➤ 0.5 V                                      | P       |

## COMPONENT STRESS TEST

| NO | TEST ITEM  | SPECIFICATION                     | TEST CONDITION   | RESULT                                       | VERDICT |
|----|--|-----------------------------------|--|--|---------|
| 1  | Power Transistor<br>( D to S) or (C to E) Peak Voltage | Q3 Rated :<br>2SK4106 12A/500V    | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue<br>Ta : 25°C                          | (1) 424 V<br>(2) 412 V<br>(3) 272 V          | P       |
| 2  | Diode Peak Voltage                                     | Q101 Rated :<br>FME-220B 20A/150V | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2)Output Short<br>(3)Full load continue<br>Ta : 25°C                           | (1) 120 V<br>(2) 123 V<br>(3) 89 V           | P       |
| 3  | Input Capacitor Voltage                                | C5 Rated :<br>100u/400V 105°C KMG | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load<br>Change<br>Ta : 25°C | (1) 373.3 V<br>(2) 376.7 V<br>(3) 377.1 V    | P       |
| 4  | Control IC Voltage Test                                | U1 Rated : FAN4801NY<br>10V~30V   | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load<br>Change<br>Ta : 25°C | (1) 16.395 V<br>(2) 13.414 V<br>(3) 13.413 V | P       |
| 5  | Power Transistor<br>( D to S) or (C to E) Peak Voltage | Q1 Rated :<br>IRFP460A 20A/500V   | I/P : High-Line +3V = 267 V<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue<br>Ta : 25°C                          | (1) 500 V<br>(2) 390 V<br>(3) 418 V          | P       |

## ■ SAFETY & E.M.C. TEST

### SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION  | TEST CONDITION  | RESULT   | VERDICT |
|----|----------------------|--|---|--|---------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P : 3 KVAC/min<br>I/P-FG : 2 KVAC/min<br>O/P-FG : 0.5 KVAC/min     | I/P-O/P : 3.6 KVAC/min<br>I/P-FG : 2.4 KVAC/min<br>O/P-FG : 0.6 KVAC/min<br>Ta : 25°C | I/P-O/P : 4.43 mA<br>I/P-FG : 3.41 mA<br>O/P-FG : 3.19 mA<br>NO DAMAGE | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P : 500VDC>100MΩ<br>I/P-FG : 500VDC>100MΩ<br>O/P-FG : 500VDC>100MΩ | I/P-O/P : 500 VDC<br>I/P-FG : 500 VDC<br>O/P-FG : 500 VDC<br>Ta : 25°C /70%RH         | I/P-O/P : 6.57 GΩ<br>I/P-FG : 5.88 GΩ<br>O/P-FG : 9.79 GΩ<br>NO DAMAGE | P       |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                                   | 40 A / 2min<br>Ta : 25°C / 70%RH  | 9 mΩ   | P       |
| 4  | APPROVAL             | TUV : Certificate NO : R50176763<br>UL : File NO : E183223               |   |  | P       |

### E.M.C TEST

| NO | TEST ITEM                                   | SPECIFICATION   | TEST CONDITION                                     | RESULT                        | VERDICT |
|----|---|---|--|-------------------------------|---------|
| 1  | HARMONIC                                    | EN61000-3-2,-3<br>CLASS A                             | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | PASS                          | P       |
| 2  | CONDUCTION                                  | EN55022<br>CLASS B                                    | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | PASS<br>Test by certified Lab | P       |
| 3  | RADIATION                                   | EN55022<br>CLASS B                                    | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | PASS<br>Test by certified Lab | P       |
| 4  | E.S.D                                       | EN61000-4-2<br>INDUSTRY<br>AIR : 8KV / Contact : 4KV  | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A                    | P       |
| 5  | E.F.T                                       | EN61000-4-4<br>INDUSTRY<br>INPUT : 2KV                | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A                    | P       |
| 6  | SURGE                                       | IEC61000-4-5<br>INDUSTRY<br>L-N : 2KV<br>L,N-PE : 4KV | I/P : 230 VAC/50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A                    | P       |
| 7  | Test by certified Lab & Test Report Prepare |   |  |                               |         |

## RELIABILITY TEST

### ENVIRONMENT TEST

| NO       | TEST ITEM                            | SPECIFICATION   | TEST CONDITION  | RESULT                      | VERDICT |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
|----------|--------------------------------------|---|---|-----------------------------|---------|-----------------------------|-----------------------------|------|------|---------------------------------|--------|--------|----|------|------------------------|--------|--------|------|----|---------------------------------|--------|--------|------|------|-------------------------|--------|--------|----|------|---------------------------|--------|--------|------|-----|-------------------------|--------|--------|------|------|--------------------------------|--------|--------|-----|------|----------------------------|--------|---------|------|------|-------------------------|--------|--------|----|-----|-------------------------|--------|--------|----|----|------------------------|--------|--------|----|------|--------------------------|--------|--------|----|------|-------------------------|--------|--------|----|------|----------------------------|--------|--------|----|------|-----------|--------|---------|----|-------|----------------------------|--------|--------|----|------|-----------------|--------|--------|----|------|-----------------------|--------|--------|----|------|-------------------------|--------|--------|----|------|-----------------|--------|--------|----|------|-----------------|--------|--------|---|
| 1.       | THERMO TRACER TEST<br>(ROOM AMBIENT) | MODEL:HRPG-200-5<br>TEST CONDITION: 100VAC FULL LOAD ROOM AMBIENT = 27°C  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
|          |                                      | <p>94180001 TR1 (定點測試)</p> <p>座標: 220, 0<br/>原資料溫度: 29.9°C (E0.941)<br/>放射率: 0.94<br/>補正後溫度: 29.9°C (E0.941)<br/>最高溫度: 126.2°C<br/>最低溫度: 26.2°C</p> <p>座標: 102, 156<br/>座標: 26, 48<br/>全場放射率: 0.940</p> <p>日期: 2009/4/10<br/>時間: 17:18:7</p>  | <table border="1"> <thead> <tr> <th>Position</th> <th>Temp</th> <th>VERDICT</th> </tr> </thead> <tbody> <tr><td>P1</td><td>62.5</td><td>PASS</td></tr> <tr><td>P2</td><td>91.5</td><td>PASS</td></tr> <tr><td>P3</td><td>76.3</td><td>PASS</td></tr> <tr><td>P4</td><td>69.6</td><td>PASS</td></tr> <tr><td>P5</td><td>82.3</td><td>PASS</td></tr> <tr><td>P6</td><td>73.1</td><td>PASS</td></tr> <tr><td>P7</td><td>73.2</td><td>PASS</td></tr> <tr><td>P8</td><td>81.5</td><td>PASS</td></tr> <tr><td>P9</td><td>74.2</td><td>PASS</td></tr> <tr><td>P10</td><td>72.5</td><td>PASS</td></tr> <tr><td>P11</td><td>89.8</td><td>PASS</td></tr> <tr><td>P12</td><td>88.6</td><td>PASS</td></tr> <tr><td>P13</td><td>98.2</td><td>PASS</td></tr> <tr><td>P14</td><td>89.1</td><td>PASS</td></tr> <tr><td>P15</td><td>104.1</td><td>PASS</td></tr> </tbody> </table> | Position                    | Temp    | VERDICT                     | P1                          | 62.5 | PASS | P2                              | 91.5   | PASS   | P3 | 76.3 | PASS                   | P4     | 69.6   | PASS | P5 | 82.3                            | PASS   | P6     | 73.1 | PASS | P7                      | 73.2   | PASS   | P8 | 81.5 | PASS                      | P9     | 74.2   | PASS | P10 | 72.5                    | PASS   | P11    | 89.8 | PASS | P12                            | 88.6   | PASS   | P13 | 98.2 | PASS                       | P14    | 89.1    | PASS | P15  | 104.1                   | PASS   | P      |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| Position | Temp                                 | VERDICT   |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P1       | 62.5                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P2       | 91.5                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P3       | 76.3                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P4       | 69.6                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P5       | 82.3                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P6       | 73.1                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P7       | 73.2                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P8       | 81.5                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P9       | 74.2                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P10      | 72.5                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P11      | 89.8                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P12      | 88.6                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P13      | 98.2                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P14      | 89.1                                 | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| P15      | 104.1                                | PASS  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 2        | TEMPERATURE RISE TEST                | MODEL : HRP-200-24<br>1. ROOM AMBIENT BURN-IN : 3 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta= 26.3 °C<br>2. HIGH AMBIENT BURN-IN : 2.5 HRS<br>I/P : 230VAC O/P : FULL LOAD Ta= 43.8 °C  |   |                             |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
|          |                                      | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>ROOM AMBIENT<br/>Ta= 26.3 °C</th> <th>HIGH AMBIENT<br/>Ta= 43.8 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>LF2</td><td>TR548-R2 R-22/14/8B(MA100) 8.8m</td><td>51.3°C</td><td>67.4°C</td></tr> <tr><td>2</td><td>BD1</td><td>6A/800V SILICON GBU608</td><td>75.9°C</td><td>90.7°C</td></tr> <tr><td>3</td><td>L3</td><td>TR872 CS234125E14 1.16u HRP-200</td><td>71.0°C</td><td>86.1°C</td></tr> <tr><td>4</td><td>Q1</td><td>IRFP460A 20A/500V TO247</td><td>65.0°C</td><td>80.3°C</td></tr> <tr><td>5</td><td>C5</td><td>100u/400V 105°C 18*25 KMG</td><td>62.2°C</td><td>76.4°C</td></tr> <tr><td>6</td><td>Q3</td><td>2SK4106 12A/500V TO220F</td><td>73.0°C</td><td>90.0°C</td></tr> <tr><td>7</td><td>T2</td><td>TR435-R4 R13x7x5A MA070 MS-300</td><td>63.4°C</td><td>77.1°C</td></tr> <tr><td>8</td><td>T1</td><td>TF2033 EER-35 HRP-200-24 B</td><td>84.7°C</td><td>100.9°C</td></tr> <tr><td>9</td><td>C150</td><td>100u/25V L5Kh 6.3*11 KY</td><td>64.1°C</td><td>79.4°C</td></tr> <tr><td>10</td><td>C61</td><td>100u/25V L5Kh 6.3*11 KY</td><td>64.5°C</td><td>78.2°C</td></tr> <tr><td>11</td><td>D1</td><td>BYC8-600 8A/600V TO220</td><td>64.2°C</td><td>79.9°C</td></tr> <tr><td>12</td><td>Q101</td><td>FME-220B 20A/150V TO220F</td><td>72.4°C</td><td>89.2°C</td></tr> <tr><td>13</td><td>L100</td><td>TR878 Ku090125-2*2 162u</td><td>84.3°C</td><td>99.3°C</td></tr> <tr><td>14</td><td>C105</td><td>1000u/35V L10Kh 12.5*25 KY</td><td>66.7°C</td><td>83.9°C</td></tr> <tr><td>15</td><td>T900</td><td>TF1593-R2</td><td>85.4°C</td><td>104.1°C</td></tr> <tr><td>16</td><td>ZD900</td><td>TVS ST02D-200 AX078 T-52mm</td><td>70.6°C</td><td>87.0°C</td></tr> <tr><td>17</td><td>U900</td><td>TNY275PN DIP-8C</td><td>77.9°C</td><td>97.1°C</td></tr> <tr><td>18</td><td>C911</td><td>22u/50V UL10Kh 5*11KY</td><td>75.5°C</td><td>92.8°C</td></tr> <tr><td>19</td><td>C956</td><td>47u/50V L5Kh 6.3*11 YXF</td><td>72.3°C</td><td>89.8°C</td></tr> <tr><td>20</td><td>TSW1</td><td>ST-22W-R0 170mm</td><td>82.0°C</td><td>98.9°C</td></tr> <tr><td>21</td><td>TSW2</td><td>ST-22W-R0 170mm</td><td>82.3°C</td><td>98.0°C</td></tr> </tbody> </table> | NO  | Position                    | P/N     | ROOM AMBIENT<br>Ta= 26.3 °C | HIGH AMBIENT<br>Ta= 43.8 °C | 1    | LF2  | TR548-R2 R-22/14/8B(MA100) 8.8m | 51.3°C | 67.4°C | 2  | BD1  | 6A/800V SILICON GBU608 | 75.9°C | 90.7°C | 3    | L3 | TR872 CS234125E14 1.16u HRP-200 | 71.0°C | 86.1°C | 4    | Q1   | IRFP460A 20A/500V TO247 | 65.0°C | 80.3°C | 5  | C5   | 100u/400V 105°C 18*25 KMG | 62.2°C | 76.4°C | 6    | Q3  | 2SK4106 12A/500V TO220F | 73.0°C | 90.0°C | 7    | T2   | TR435-R4 R13x7x5A MA070 MS-300 | 63.4°C | 77.1°C | 8   | T1   | TF2033 EER-35 HRP-200-24 B | 84.7°C | 100.9°C | 9    | C150 | 100u/25V L5Kh 6.3*11 KY | 64.1°C | 79.4°C | 10 | C61 | 100u/25V L5Kh 6.3*11 KY | 64.5°C | 78.2°C | 11 | D1 | BYC8-600 8A/600V TO220 | 64.2°C | 79.9°C | 12 | Q101 | FME-220B 20A/150V TO220F | 72.4°C | 89.2°C | 13 | L100 | TR878 Ku090125-2*2 162u | 84.3°C | 99.3°C | 14 | C105 | 1000u/35V L10Kh 12.5*25 KY | 66.7°C | 83.9°C | 15 | T900 | TF1593-R2 | 85.4°C | 104.1°C | 16 | ZD900 | TVS ST02D-200 AX078 T-52mm | 70.6°C | 87.0°C | 17 | U900 | TNY275PN DIP-8C | 77.9°C | 97.1°C | 18 | C911 | 22u/50V UL10Kh 5*11KY | 75.5°C | 92.8°C | 19 | C956 | 47u/50V L5Kh 6.3*11 YXF | 72.3°C | 89.8°C | 20 | TSW1 | ST-22W-R0 170mm | 82.0°C | 98.9°C | 21 | TSW2 | ST-22W-R0 170mm | 82.3°C | 98.0°C | P |
| NO       | Position                             | P/N   | ROOM AMBIENT<br>Ta= 26.3 °C   | HIGH AMBIENT<br>Ta= 43.8 °C |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 1        | LF2                                  | TR548-R2 R-22/14/8B(MA100) 8.8m   | 51.3°C  | 67.4°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 2        | BD1                                  | 6A/800V SILICON GBU608  | 75.9°C  | 90.7°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 3        | L3                                   | TR872 CS234125E14 1.16u HRP-200   | 71.0°C  | 86.1°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 4        | Q1                                   | IRFP460A 20A/500V TO247   | 65.0°C  | 80.3°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 5        | C5                                   | 100u/400V 105°C 18*25 KMG   | 62.2°C  | 76.4°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 6        | Q3                                   | 2SK4106 12A/500V TO220F   | 73.0°C  | 90.0°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 7        | T2                                   | TR435-R4 R13x7x5A MA070 MS-300  | 63.4°C  | 77.1°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 8        | T1                                   | TF2033 EER-35 HRP-200-24 B  | 84.7°C  | 100.9°C                     |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 9        | C150                                 | 100u/25V L5Kh 6.3*11 KY   | 64.1°C  | 79.4°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 10       | C61                                  | 100u/25V L5Kh 6.3*11 KY   | 64.5°C  | 78.2°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 11       | D1                                   | BYC8-600 8A/600V TO220  | 64.2°C  | 79.9°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 12       | Q101                                 | FME-220B 20A/150V TO220F  | 72.4°C  | 89.2°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 13       | L100                                 | TR878 Ku090125-2*2 162u   | 84.3°C  | 99.3°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 14       | C105                                 | 1000u/35V L10Kh 12.5*25 KY  | 66.7°C  | 83.9°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 15       | T900                                 | TF1593-R2   | 85.4°C  | 104.1°C                     |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 16       | ZD900                                | TVS ST02D-200 AX078 T-52mm  | 70.6°C  | 87.0°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 17       | U900                                 | TNY275PN DIP-8C   | 77.9°C  | 97.1°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 18       | C911                                 | 22u/50V UL10Kh 5*11KY   | 75.5°C  | 92.8°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 19       | C956                                 | 47u/50V L5Kh 6.3*11 YXF   | 72.3°C  | 89.8°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 20       | TSW1                                 | ST-22W-R0 170mm   | 82.0°C  | 98.9°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |
| 21       | TSW2                                 | ST-22W-R0 170mm   | 82.3°C  | 98.0°C                      |         |                             |                             |      |      |                                 |        |        |    |      |                        |        |        |      |    |                                 |        |        |      |      |                         |        |        |    |      |                           |        |        |      |     |                         |        |        |      |      |                                |        |        |     |      |                            |        |         |      |      |                         |        |        |    |     |                         |        |        |    |    |                        |        |        |    |      |                          |        |        |    |      |                         |        |        |    |      |                            |        |        |    |      |           |        |         |    |       |                            |        |        |    |      |                 |        |        |    |      |                       |        |        |    |      |                         |        |        |    |      |                 |        |        |    |      |                 |        |        |   |

|    |   |  |   |  |   |
|----|---|--|---|--|---|
| 3  | OVER LOAD BURN-IN TEST  | NO DAMAGE<br>1 HOUR (MIN)  | I/P : 230 VAC<br>O/P : 122 % LOAD<br>Ta : 25°C                    | TEST : OK                                      | P |
| 4  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER 2 HOUR   | I/P : 264VAC/100VAC<br>O/P : 100 % LOAD<br>Ta= -40 °C             | TEST : OK                                      | P |
| 5  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 40 °C<br>NO DAMAGE  | I/P : 272 VAC<br>O/P : FULL LOAD<br>Ta= 40°C<br>HUMIDITY= 95 %R.H | TEST : OK                                      | P |
| 6  | TEMPERATURE<br>COEFFICIENT  | ± 0.04 %(0~50°C)   | I/P : 230 VAC<br>O/P : FULL LOAD                                  | ± 0.006 %(0~50°C)                              | P |
| 7  | STORAGE TEMPERATURE<br>TEST                                       | 1. Thermal shock Temperature : -45°C~ +90°C<br>2. Temperature change rate : 25°C / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 5 CYCLE<br>5. Input/Output condition : STATIC            |   | OK   | P |
| 8. | THERMAL SHOCK TEST  | 1. Thermal shock Temperature : -40°C~ +45°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 : 230VAC/Full Load |   | OK   | P |
| 9  | 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 : 5G<br>(5) Test Time : 60min in each axis (X.Y.Z)<br>(6) Ta : 25°C                           |   | TEST : OK                                      | P |
| 10 | CAPACITOR<br>LIFE CYCLE   | HRPG-200-24:SUPPOSE C105 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= 40 °C LIFE TIME<br>(3) I/P : 230VAC O/P : 75% LOAD Ta= 40 °C LIFE TIME   |   | (1) 185942HRS<br>(2) 67159HRS<br>(3) 111374HRS | P |
| 11 | MTBF  | MIL-HDBK-217F NOTICES2 PARTS COUNT<br>TOTAL FAILURE RATE : 189.1K HRS  |   |  | P |

| DATE       | SAMPLE         | TEST RESULT | TESTER     | APPROVAL      |
|------------|----------------|-------------|------------|---------------|
| 2009/12/1  | RD SAMPLE      | PASS        | SANFORD SU | VINCENT TSENG |
| 2009/12/18 | PRODUCT SAMPLE | PASS        | SANFORD SU | VINCENT TSENG |
| 2010/3/30  | W1003A69       | PASS        | SANFORD SU | VINCENT TSENG |

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