



Test Report: HVGC-1000-L

1000W Constant Power 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 | CURRENT TOLERANCE | ±5% | I/P: 347VAC I/P: 480VAC O/P: LEDMAX CP: 2.64A & 3.28A Ta: 25°C | CP 2.64A: 2.646A/347VAC@LED MAX-1V 2.67A/347VAC@LED MIN 2.644A/480VAC@LED MAX-1V 2.67A/480VAC@LED MIN 1.136% CP 3.28A: 3.28A/347VAC@LED MAX-1V 3.266A/347VAC@LED MIN 3.28A/480VAC@LED MAX-1V 3.266A/480VAC@LED MIN 0.426% |
| 2 | FULL POWER CURRENT RANGE | 2640~3280mA | I/P: 347VAC O/P: LEDMAX CP: 2.64A & 3.28A Ta: 25°C | 385.8V/2.64A/347VAC 309.6V/3.28A/347VAC |
| 3 | OPEN CIRCUIT VOLTAGE (max) | 390V | I/P: 347VAC O/P: NO LOAD CP: OPEN Ta: 25°C | 388.09V |
| 4 | CONSTANT CURRENT REGION | CP 2.64A: CH1: 190V~380V CP 3.28A: CH1: 150V~306V | I/P: 347VAC O/P: LEDMAX CP: 2.64A & 3.28A Ta: 25°C | CP 2.64A: 0.168V~380 V/347VAC CP 3.28A: 0.18V~306V/347VAC |
| 5 | CURRENT ADJ. RANGE | CH1: 1315mA~3280mA | I/P: 347VAC I/P: 480VAC O/P: CV MIN & CV MAX-1V CP: 2.64A & 3.28A Ta: 25°C | 1.3mA~3.286mA/347VAC@LED MAX-1V 1.3mA~3.286mA/347VAC@LED MIN 1.3mA~3.286mA/480VAC@LED MAX-1V 1.3mA~3.286mA/480VAC@LED MIN |
| 6 | CURRENT RIPPLE | 3.0% max. @rated current | I/P: 347VAC O/P: 50% LOAD CP: 2.64A & 3.28A Ta: 25°C | CP 2.64A: 2.36% CP 3.28A: 1.87% |
| 7 | AUXILIARY POWER | Nominal 12V (Tolerance: ±10%, R&N: 150mVp-p)@500mA for HVGC-1000A only | I/P: 347VAC O/P: LED MIN / LEDMAX CP: 2.64A Ta: 25°C | CP 2.64A: 11.867v/80mv |
| 8 | SET UP TIME | 230VAC/ 500 ms (Max) 347VAC/ 500 ms (Max) 480VAC/ 500 ms (Max) | I/P: 230VAC I/P: 347VAC I/P: 480VAC O/P: LEDMAX CP 2.64A Ta: 25°C | 230VAC/312ms 347VAC/ 274ms 480VAC/271ms |
| INPUT=230VAC/50HZ @ LEDMAX CH1 : Output Voltage CH2 : AC Input Voltage | | | INPUT=347VAC/60HZ @ LEDMAX CH1 : Output Voltage CH2 : AC Input Voltage | |

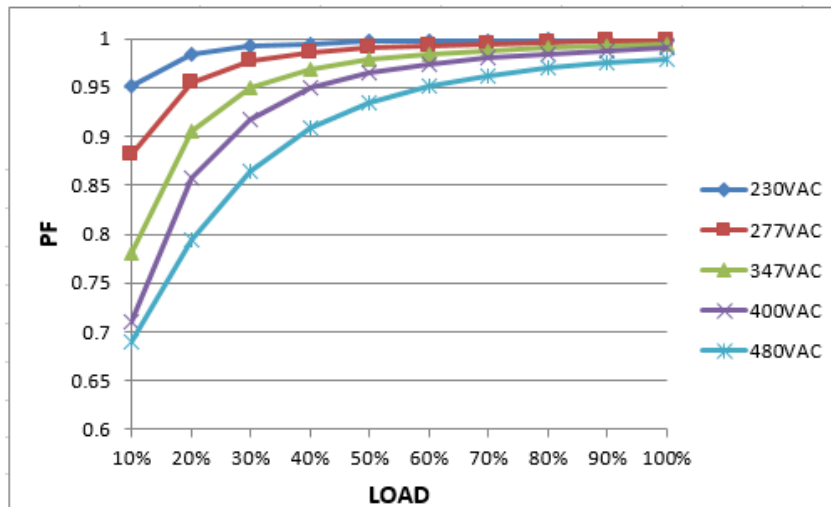


INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|-----------------------|---------------------------------|---|---|
| 1 | INPUT VOLTAGE RANGE | 180VAC~528 VAC | I/P: TESTING O/P: LEDMAX CP 2.64A Ta: 25°C | 162V~528 V |
| | | | I/P: LOW-LINE-3V=177 V HIGH-LINE+10V=538 V O/P: FULL/MIN LOAD CP 2.64A (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE) | (1). TEST: OK (2). TEST: OK |
| 2 | INPUT FREQUENCY RANGE | 47HZ ~63 HZ NO DAMAGE | I/P: 180 VAC ~528VAC O/P: FULL~MIN LOAD CP 2.64A Ta: 25°C | TEST: OK |
| 3 | INPUT CURRENT (TYP) | 347VAC/ 3.15 A 480VAC/ 2.28A | I/P: 347VAC/480VAC O/P: LEDMAX CP 2.64A Ta: 25°C | I = 3.041A/ 347VAC I = 2.233A/480VAC |
| 4 | LEAKAGE CURRENT | EN61347-1 < 0.75mA / 480VAC | I/P: 480 VAC O/P: Min LOAD Ta: 25°C | L-FG: 0.4mA N-FG: 0.4mA |

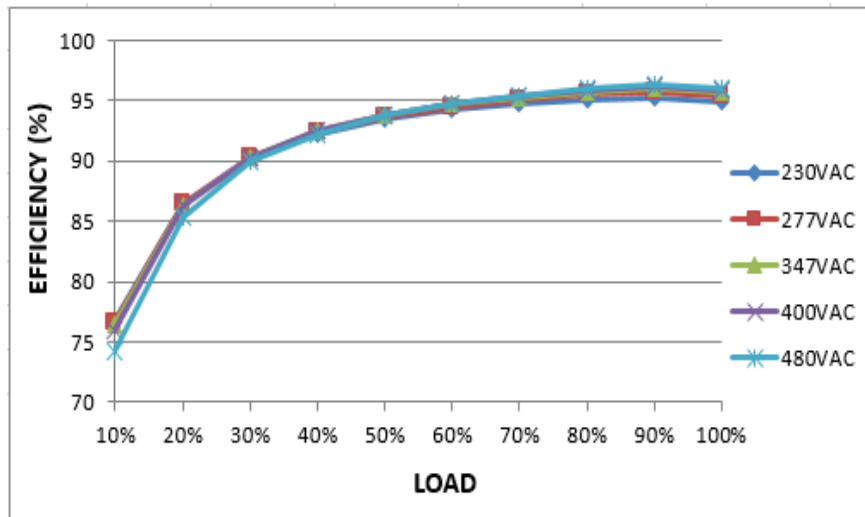
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|---|---------------------------|---|--|---|
| 5 | STANDBY POWER CONSUMPTION | Standby power consumption <2W for AB-Type(Dimming OFF) | I/P: 347VAC O/P: LEDMAX. CP 2.64A Dimming OFF Ta:25°C | 1.08W |
| 6 | POWER FACTOR(TYP) | 0.97/347VAC LEDMAX 0.95/480VAC LEDMAX 0.98/277 VAC LEDMAX 0.98/230 VAC LEDMAX 0.96/400 VAC LEDMAX | I/P: 347VAC/480VAC/277VAC/230VAC/400VAC O/P: LEDMAX CP 2.64A Ta:25°C | PF= 0.992/347V/100%LOAD PF= 0.97/480V/100%LOAD PF=0.997/277V/100%LOAD PF=0.999/230V/100%LOAD PF=0.989/400V/100%LOAD |

P.F vs LOAD

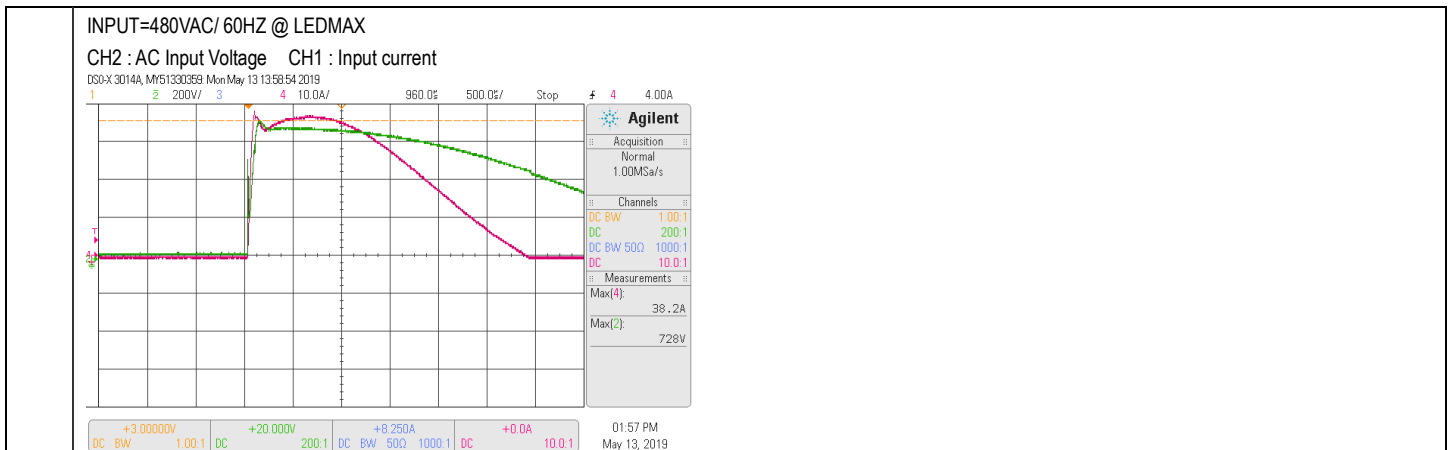


| | | | | |
|---|------------------|-------|--|-------|
| 7 | EFFICIENCY (TYP) | 95.5% | I/P: 347VAC O/P: LEDMAX. CP 2.64A Ta:25°C | 95.8% |
|---|------------------|-------|--|-------|

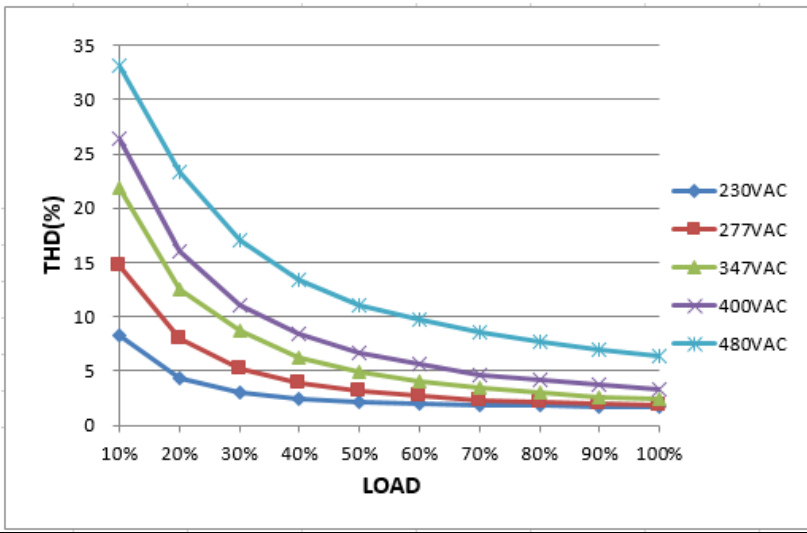
EFFICIENCY vs LOAD



| | | | | |
|---|----------------------|--|---|--------------------------------------|
| 8 | INRUSH CURRENT (TYP) | 480V/ 40A COLD START (twidth=1850 us measured at 50% Ipeak) COLD START | I/P: 480VAC O/P: LEDMAX CP 2.64A Ta:25°C | I =38.2A /480VAC T50= 1840 uS |
|---|----------------------|--|---|--------------------------------------|



| | | | | |
|---|---------------------------|----------------------------------|--|---|
| 9 | TOTAL HARMONIC DISTORTION | THD < 10% @ 347VAC > 80% loading | I/P : 480VVAC O/P : LEDmax 80% LOAD CP 2.64A Ta : 25°C | THD : 3.93 %347V 80% THD : 3.09 %347V 100% |
| | THD vs LOAD | | | |



ROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|-----------------------------|--|--|--|
| 1 | OVER VOLTAGE PROTECTION | V1: 390V~425V PROTECTION TYPE : Shut down output voltage, re-power on to recovery | I/P: 528VAC I/P: 347VAC I/P: 180VAC CP 2.64A O/P: MIN LOAD Ta: 25°C | 402.89V / 528VAC 402.01V / 347VAC 403.13V / 180VAC PROTECTION TYPE : Shut down output voltage, re-power on to recovery |
| 2 | OVER TEMPERATURE PROTECTION | PROTECTION TYPE : Shut down output voltage, re-power on to recovery | I/P: 528 VAC I/P: 180 VAC O/P: LEDMAX CP 2.64A Ta: 25°C | O.T.P. Active PROTECTION TYPE : Shut down output voltage, re-power on to recovery |

| | | | | |
|---|------------------|---|--|--|
| 3 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed | I/P: 528VAC I/P: 180 VAC O/P: LEDMAX CP: 2.64A & 3.28A Ta:25°C | CP: 2.64A NO DAMAGE PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed CP: 3.28A NO DAMAGE PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed |
|---|------------------|---|--|--|

COMPONENT STRESS TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|---|--|--|--|
| 1 | PWM Transistor (D to S) or (C to E) Peak Voltage | Q11 Rated: 18.4A /1200V | I/P:High-Line +3V =531v AC ON/OFF CP: 2.64A&3.28A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short I/P:Low-Line -3V = 177V O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C | CP: 2.64A CP: 3.28A Q11 Q11 VDS: VDS: (1) 914V (1) 897V (2) 817V (2) 817V (3) 889V (3) 906V (4) 809V (4) 817V (5) 930V (5) 881V VDS: VDS: (1) 897V (1) 897V (2) 809V (2) 817V (3) 873V (3) 881V (4) 809V (4) 817V (5) 881V (5) 881V |
| 2 | P.F.C Transistor (D to S) or (C to E) Peak Voltage | Q1 Rated: 18.4A /1200V VGS: ±25V | I/P:High-Line +3V =531V AC ON/OFF CP: 2.64A VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short I/P:Low-Line -3V = 177V O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C | CP: 2.64A Q1 VDS: (1) 962V (2) 841V (3) 930V (4) 817V (5) 1074V VDS: (1)970 V (2) 881V (3) 873V (4) 841V (5) 857V |
| 3 | P.F.C DIODE | D8 Rated: 15A/1200V | I/P:High-Line +3V =531 V AC ON/OFF CP: 2.64A O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short | CP: 2.64A (1)897 V (2) 889V (3) 873V (4) 809V (5) 992V |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|---|--|---|--|------------------|-----------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|---------|-----------|---------|-----------|---------|-------------|-------------|-----------|------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|---------|-------------|--|-----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|
| | | | I/P:Low-Line -3V = 177V O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C | (1) 906V (2) 873V (3) 865V (4) 817V (5) 825V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Diode Peak Voltage | D100 Rated: 10A/600V VGS:25V D121 Rated: 10A/600V VGS:25V D571 Rated: 1A/200V | I/P:High-Line +3V =531 V VDS: O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C | <table border="0"> <tr> <td>CP: 2.64A</td> <td>CP:3.28A</td> </tr> <tr> <td>D100</td> <td>D100</td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1)376 V</td> <td>(1)296V</td> </tr> <tr> <td>(2) 376V</td> <td>(2)296V</td> </tr> <tr> <td>(3) 187V</td> <td>(3)143V</td> </tr> <tr> <td>(4) 187V</td> <td>(4)143V</td> </tr> <tr> <td>(5) 388V</td> <td>(5)392V</td> </tr> <tr> <td>(6) 380V</td> <td>(6)380V</td> </tr> <tr> <td>D121</td> <td>D121</td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1) 380V</td> <td>(1)296V</td> </tr> <tr> <td>(2) 376V</td> <td>(2)296V</td> </tr> <tr> <td>(3) 187V</td> <td>(3)143V</td> </tr> <tr> <td>(4) 187V</td> <td>(4)143V</td> </tr> <tr> <td>(5) 388V</td> <td>(5)388V</td> </tr> <tr> <td>(6) 380V</td> <td>(6)380V</td> </tr> <tr> <td>D571</td> <td></td> </tr> <tr> <td>(1) 67.4V</td> <td></td> </tr> <tr> <td>(2)61.6V</td> <td></td> </tr> <tr> <td>(3)66.4V</td> <td></td> </tr> <tr> <td>(4)62.4V</td> <td></td> </tr> <tr> <td>(5)67.2V</td> <td></td> </tr> <tr> <td>(6)80.9V</td> <td></td> </tr> </table> | CP: 2.64A | CP:3.28A | D100 | D100 | VDS: | VDS: | (1)376 V | (1)296V | (2) 376V | (2)296V | (3) 187V | (3)143V | (4) 187V | (4)143V | (5) 388V | (5)392V | (6) 380V | (6)380V | D121 | D121 | VDS: | VDS: | (1) 380V | (1)296V | (2) 376V | (2)296V | (3) 187V | (3)143V | (4) 187V | (4)143V | (5) 388V | (5)388V | (6) 380V | (6)380V | D571 | | (1) 67.4V | | (2)61.6V | | (3)66.4V | | (4)62.4V | | (5)67.2V | | (6)80.9V | |
| CP: 2.64A | CP:3.28A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D100 | D100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VDS: | VDS: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1)376 V | (1)296V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2) 376V | (2)296V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3) 187V | (3)143V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4) 187V | (4)143V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (5) 388V | (5)392V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (6) 380V | (6)380V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D121 | D121 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VDS: | VDS: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1) 380V | (1)296V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2) 376V | (2)296V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3) 187V | (3)143V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4) 187V | (4)143V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (5) 388V | (5)388V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (6) 380V | (6)380V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D571 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1) 67.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2)61.6V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3)66.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4)62.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (5)67.2V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (6)80.9V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Input Capacitor Voltage | C5 Rated: 220u/450V*2 | I/P:High-Line +3V =531V CP 2.64A O/P: (1)LEDmax input on/off (2) Min load input on /Off (3)LEDmax /Min load Change (4)LEDmax continue Ta:25°C | <table border="0"> <tr> <td>CP: 2.64A</td> </tr> <tr> <td>(1)897V</td> </tr> <tr> <td>(2)849V</td> </tr> <tr> <td>(3)889V</td> </tr> <tr> <td>(4)809V</td> </tr> </table> | CP: 2.64A | (1)897V | (2)849V | (3)889V | (4)809V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CP: 2.64A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1)897V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2)849V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3)889V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4)809V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Control IC Voltage Test | PFC IC U1 Rated 21V~11.5V(MIN.) PWM IC U2 Rated 16V~ 8.85V(MIN.) AUX IC U500 Rated 35V~9V(MIN.) | I/P:High-Line +3V =531 V AC ON/OFF CP: 2.64A O/P: (1)LEDmax (2) LEDmin (3) Output Short (4) NO LOAD LOW LINE Ta:25°C | <table border="0"> <tr> <td>CP: 2.64A</td> <td>U500</td> </tr> <tr> <td>U1</td> <td></td> </tr> <tr> <td>(1) 13.1V</td> <td>(1) 19.4V</td> </tr> <tr> <td>(2) 13.1V</td> <td>(2) 20.8V</td> </tr> <tr> <td>(3) 13.1V</td> <td>(3) 19.4V</td> </tr> <tr> <td>(4) 13.1V</td> <td>(4) 19.4V</td> </tr> <tr> <td>U2</td> <td></td> </tr> <tr> <td>(1) 13.3V</td> <td></td> </tr> <tr> <td>(2) 13.5V</td> <td></td> </tr> <tr> <td>(3) 13.3V</td> <td></td> </tr> <tr> <td>(4) 13.1V</td> <td></td> </tr> </table> | CP: 2.64A | U500 | U1 | | (1) 13.1V | (1) 19.4V | (2) 13.1V | (2) 20.8V | (3) 13.1V | (3) 19.4V | (4) 13.1V | (4) 19.4V | U2 | | (1) 13.3V | | (2) 13.5V | | (3) 13.3V | | (4) 13.1V | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CP: 2.64A | U500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1) 13.1V | (1) 19.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2) 13.1V | (2) 20.8V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3) 13.1V | (3) 19.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4) 13.1V | (4) 19.4V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1) 13.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2) 13.5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3) 13.3V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4) 13.1V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | STAND BY POWER PWM Transistor (D to S) or (C to E) Peak Voltage | Q501 Rated 2.5A/1500V VGS : ±30V | I/P:High-Line +3V =531v AC ON/OFF CP: 2.64A VDS: O/P: (1)LEDmax (2) LEDmax continue | <table border="0"> <tr> <td>CP: 2.64A</td> </tr> <tr> <td>Q501</td> </tr> <tr> <td>VDS:</td> </tr> <tr> <td>(1)1204V</td> </tr> <tr> <td>(2)1116V</td> </tr> <tr> <td>(3)1188V</td> </tr> </table> | CP: 2.64A | Q501 | VDS: | (1)1204V | (2)1116V | (3)1188V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CP: 2.64A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VDS: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1)1204V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (2)1116V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (3)1188V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|--|--|--|---|---|
| | | | (3) LEDmin (4) LEDmin continue (5) Output Short I/P:Low-Line -3V = 177V O/P: (1)LEDmax (2) LEDmax continue (3) LEDmin (4) LEDmin continue (5) Output Short Ta:25°C | (4)1108V (5)1212V Q501 VDS: (1)1196 V (2) 1116V (3) 1172V (4) 1108V (5)1140 V |
|--|--|--|---|---|

SAFETY & EMC TEST

SAFETY TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|----------------------|---|--|--|
| 1 | WITHSTAND VOLTAGE | EN61347-1 I/P-O/P: 3KVAC/min I/P-FG: 2 KVAC/min<4.5mA O/P-FG:1.5KVAC/min | I/P-O/P: 3.6KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C | I/P-O/P:3.15mA I/P-FG: 2.498mA O/P-FG:4.06mA NO DAMAGE |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C | I/P-O/P: 5.62GΩ I/P-FG: 3.58G Ω O/P-FG: 30G Ω NO DAMAGE |
| 3 | GROUNDING CONTINUITY | EN61347-1 FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40A / 2min Ta:25°C | 21mΩ |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|--|--|---|-------------------------------|
| 1 | CONDUCTION | FCC PART 15 | I/P:347VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C | PASS Test by certified Lab |
| 2 | RADIATION | FCC PART 15 | I/P: 347VAC (50HZ) O/P:LEDMAX Ta:25°C | PASS Test by certified Lab |
| 3 | E.S.D | EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV | I/P: 347VAC (50HZ) O/P:LEDMAX Ta:25°C | CRITERIA A |
| 4 | E.F.T | EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV | I/P: 347VAC (50HZ) O/P:LEDMAX Ta:25°C | CRITERIA A |
| 5 | SURGE | IEC61000-4-5 light industry L-N :4KV L,N-PE:8KV | I/P: 347VAC (50HZ) O/P:LEDMAX Ta:25°C | CRITERIA A |
| 6 | Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report. | | | |

■ RELIABILITY TEST

ENVIRONMENT TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|------------------------|---|---|-----------------------|-----------------------|----------|-----------------------|-----------------------|---|-----|--------|--------|---|-----|--------|--------|---|------|--------|--------|---|-----|--------|--------|---|-----|--------|--------|---|------|--------|--------|---|----|--------|--------|---|------|--------|--------|---|-----|--------|--------|----|-----|--------|--------|----|-----|--------|--------|----|----|--------|--------|----|----|--------|--------|----|----|--------|---------|----|------|--------|--------|----|------|--------|--------|----|----|--------|--------|----|-----|--------|--------|----|----|--------|--------|----|----|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|---------|--------|--------|----|---------|--------|--------|----|----|--------|--------|----|------|--------|--------|----|----|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|---------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|----|------|--------|--------|
| 1 | TEMPERATURE RISE TEST | MODEL : HVGC-1000-L 1. ROOM AMBIENT BURN-IN : 2.5 HRS I/P : 347VAC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 3 HRS I/P : 347VAC O/P : FULL LOAD Ta= 50°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25°C</th> <th>HIGH AMBIENT Ta= 50°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>76.9°C</td><td>92.3°C</td></tr> <tr><td>2</td><td>BD2</td><td>77.5°C</td><td>92.7°C</td></tr> <tr><td>3</td><td>ZNR4</td><td>70.7°C</td><td>85.3°C</td></tr> <tr><td>4</td><td>LF2</td><td>75.4°C</td><td>90.2°C</td></tr> <tr><td>5</td><td>LF1</td><td>69.4°C</td><td>83.5°C</td></tr> <tr><td>6</td><td>ZNR1</td><td>67.6°C</td><td>82.7°C</td></tr> <tr><td>7</td><td>C6</td><td>75.3°C</td><td>92.6°C</td></tr> <tr><td>8</td><td>C935</td><td>79.3°C</td><td>97.7°C</td></tr> <tr><td>9</td><td>C11</td><td>73.2°C</td><td>89.7°C</td></tr> <tr><td>10</td><td>Q10</td><td>80.6°C</td><td>99.8°C</td></tr> <tr><td>11</td><td>Q11</td><td>80.7°C</td><td>99.4°C</td></tr> <tr><td>12</td><td>D8</td><td>78.4°C</td><td>95.8°C</td></tr> <tr><td>13</td><td>Q1</td><td>75.2°C</td><td>91.8°C</td></tr> <tr><td>14</td><td>L3</td><td>88.2°C</td><td>108.8°C</td></tr> <tr><td>15</td><td>TSW1</td><td>73.8°C</td><td>91.6°C</td></tr> <tr><td>16</td><td>TSW2</td><td>71.2°C</td><td>89.5°C</td></tr> <tr><td>17</td><td>L2</td><td>78.8°C</td><td>98.1°C</td></tr> <tr><td>18</td><td>C94</td><td>78.3°C</td><td>96.5°C</td></tr> <tr><td>19</td><td>T1</td><td>77.7°C</td><td>95.4°C</td></tr> <tr><td>20</td><td>T2</td><td>81.1°C</td><td>99.7°C</td></tr> <tr><td>21</td><td>C110</td><td>65.9°C</td><td>84.1°C</td></tr> <tr><td>22</td><td>D100</td><td>76.1°C</td><td>94.9°C</td></tr> <tr><td>23</td><td>C105</td><td>67.5°C</td><td>85.3°C</td></tr> <tr><td>24</td><td>T1 core</td><td>78.6°C</td><td>96.8°C</td></tr> <tr><td>25</td><td>T2 core</td><td>78.0°C</td><td>97.0°C</td></tr> <tr><td>26</td><td>U1</td><td>71.9°C</td><td>86.3°C</td></tr> <tr><td>27</td><td>U900</td><td>69.7°C</td><td>84.3°C</td></tr> <tr><td>28</td><td>D5</td><td>74.0°C</td><td>90.3°C</td></tr> <tr><td>29</td><td>U201</td><td>76.9°C</td><td>94.7°C</td></tr> <tr><td>30</td><td>D123</td><td>78.9°C</td><td>95.8°C</td></tr> <tr><td>31</td><td>U107</td><td>69.6°C</td><td>86.1°C</td></tr> <tr><td>32</td><td>Q511</td><td>71.9°C</td><td>88.2°C</td></tr> <tr><td>33</td><td>C521</td><td>74.4°C</td><td>90.8°C</td></tr> <tr><td>34</td><td>Q501</td><td>83.6°C</td><td>102.1°C</td></tr> <tr><td>35</td><td>D501</td><td>78.9°C</td><td>96.1°C</td></tr> <tr><td>36</td><td>T500</td><td>78.8°C</td><td>97.4°C</td></tr> <tr><td>37</td><td>U501</td><td>70.2°C</td><td>86.2°C</td></tr> <tr><td>38</td><td>C573</td><td>74.0°C</td><td>90.7°C</td></tr> <tr><td>39</td><td>C155</td><td>62.3°C</td><td>79.9°C</td></tr> </tbody> </table> | | | NO | Position | ROOM AMBIENT Ta= 25°C | HIGH AMBIENT Ta= 50°C | 1 | BD1 | 76.9°C | 92.3°C | 2 | BD2 | 77.5°C | 92.7°C | 3 | ZNR4 | 70.7°C | 85.3°C | 4 | LF2 | 75.4°C | 90.2°C | 5 | LF1 | 69.4°C | 83.5°C | 6 | ZNR1 | 67.6°C | 82.7°C | 7 | C6 | 75.3°C | 92.6°C | 8 | C935 | 79.3°C | 97.7°C | 9 | C11 | 73.2°C | 89.7°C | 10 | Q10 | 80.6°C | 99.8°C | 11 | Q11 | 80.7°C | 99.4°C | 12 | D8 | 78.4°C | 95.8°C | 13 | Q1 | 75.2°C | 91.8°C | 14 | L3 | 88.2°C | 108.8°C | 15 | TSW1 | 73.8°C | 91.6°C | 16 | TSW2 | 71.2°C | 89.5°C | 17 | L2 | 78.8°C | 98.1°C | 18 | C94 | 78.3°C | 96.5°C | 19 | T1 | 77.7°C | 95.4°C | 20 | T2 | 81.1°C | 99.7°C | 21 | C110 | 65.9°C | 84.1°C | 22 | D100 | 76.1°C | 94.9°C | 23 | C105 | 67.5°C | 85.3°C | 24 | T1 core | 78.6°C | 96.8°C | 25 | T2 core | 78.0°C | 97.0°C | 26 | U1 | 71.9°C | 86.3°C | 27 | U900 | 69.7°C | 84.3°C | 28 | D5 | 74.0°C | 90.3°C | 29 | U201 | 76.9°C | 94.7°C | 30 | D123 | 78.9°C | 95.8°C | 31 | U107 | 69.6°C | 86.1°C | 32 | Q511 | 71.9°C | 88.2°C | 33 | C521 | 74.4°C | 90.8°C | 34 | Q501 | 83.6°C | 102.1°C | 35 | D501 | 78.9°C | 96.1°C | 36 | T500 | 78.8°C | 97.4°C | 37 | U501 | 70.2°C | 86.2°C | 38 | C573 | 74.0°C | 90.7°C | 39 | C155 | 62.3°C | 79.9°C |
| | | NO | Position | ROOM AMBIENT Ta= 25°C | HIGH AMBIENT Ta= 50°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | BD1 | 76.9°C | 92.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2 | BD2 | 77.5°C | 92.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 3 | ZNR4 | 70.7°C | 85.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 4 | LF2 | 75.4°C | 90.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 5 | LF1 | 69.4°C | 83.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 6 | ZNR1 | 67.6°C | 82.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 7 | C6 | 75.3°C | 92.6°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 8 | C935 | 79.3°C | 97.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 9 | C11 | 73.2°C | 89.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 10 | Q10 | 80.6°C | 99.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 11 | Q11 | 80.7°C | 99.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 12 | D8 | 78.4°C | 95.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 13 | Q1 | 75.2°C | 91.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14 | L3 | 88.2°C | 108.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 15 | TSW1 | 73.8°C | 91.6°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 16 | TSW2 | 71.2°C | 89.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 17 | L2 | 78.8°C | 98.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 18 | C94 | 78.3°C | 96.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 19 | T1 | 77.7°C | 95.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 | T2 | 81.1°C | 99.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 21 | C110 | 65.9°C | 84.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 22 | D100 | 76.1°C | 94.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 23 | C105 | 67.5°C | 85.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 24 | T1 core | 78.6°C | 96.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 25 | T2 core | 78.0°C | 97.0°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 26 | U1 | 71.9°C | 86.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 27 | U900 | 69.7°C | 84.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 28 | D5 | 74.0°C | 90.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 29 | U201 | 76.9°C | 94.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 30 | D123 | 78.9°C | 95.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 31 | U107 | 69.6°C | 86.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 32 | Q511 | 71.9°C | 88.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 33 | C521 | 74.4°C | 90.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 34 | Q501 | 83.6°C | 102.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 35 | D501 | 78.9°C | 96.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 36 | T500 | 78.8°C | 97.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 37 | U501 | 70.2°C | 86.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | C573 | 74.0°C | 90.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | C155 | 62.3°C | 79.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | I/P : 347 VAC O/P : short Ta : 25°C | TEST : OK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 3 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | I/P : 528VAC/180VAC O/P : 100 % LOAD Ta= -45 °C | TEST : OK |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE | I/P : 538 VAC O/P : FULL LOAD Ta= 50 °C HUMIDITY= 95 %R.H | TEST : OK |
| 5 | TEMPERATURE COEFFICIENT | ± 0.03 %(0°C~50°C) | I/P : 347 VAC O/P : FULL LOAD | ± 0.008 %(0~50°C) |
| 6 | STORAGE TEMPERATURE TEST | -40~85°C | 1. Thermal shock Temperature : -50°C~+125°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 200CYCLE 5. Input/Output condition : STATIC | |
| 7 | THERMAL SHOCK TEST | -40~50°C | 1. Thermal shock Temperature : -45°C~+55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test | |
| 8 | VIBRATION TEST | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes | 1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 6G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C | |
| 9 | CAPACITOR LIFE CYCLE | SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 347VAC O/P : FULL LOAD Tc= 80 °C LIFE TIME (2) I/P : 347VAC O/P : 75% LOAD Tc= 80 °C LIFE TIME (3) I/P : 347VAC O/P : 50% LOAD Tc= 80 °C LIFE TIME | | (1) 50846HRS (2) 50098HRS (3) 50805HRS |
| 10 | MTBF | Conducted by Parts Stress Analysis Prediction 682.8K hrs min. Telcordia SR-332 (Bellcore) ; 68.4K hrs min. MIL-HDBK-217F (25°C) | | |
| 11 | Ongoing Reliability Test | I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours | | |

| TEST RESULT | TESTER | REVIEW | APPROVAL |
|-------------|------------|------------|--------------|
| PASS | DANIEL GAO | SANFORD SU | VINCENT ZENG |

2018.4.30 GP-A50-F010