



Test Report: RSDH-300-32

300W High Reliable 250~1500Vdc Ultra Wide Input
DC-DC Converter

■ DESIGN VERIFY TEST

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

■ SAFETY & E.M.C. TEST

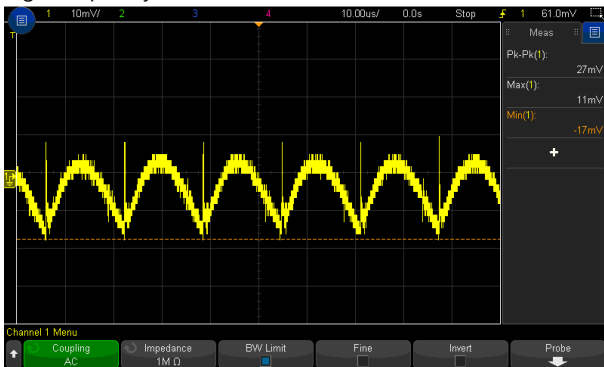
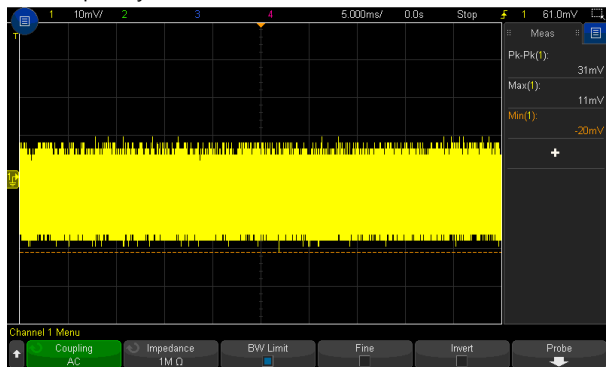
Safety Test
E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

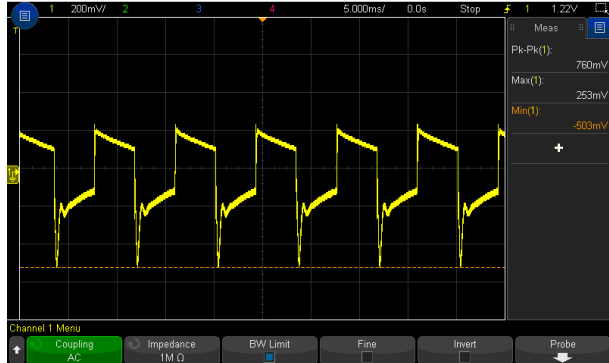
DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

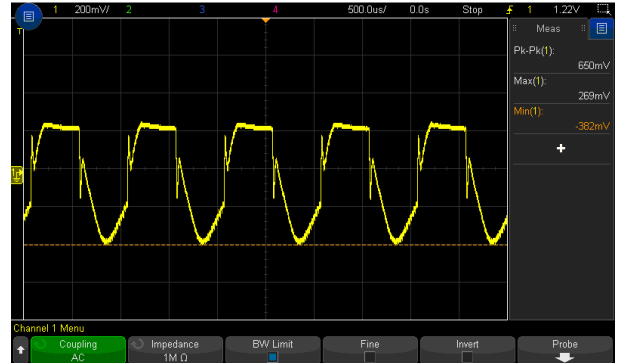
| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|--------------------------------|---|---|--|
| 1 | OUTPUT VOLTAGE ADJUST RANGE | CH1: 30V~ 36V | I/P : 800 VDC O/P : MIN LOAD Ta : 25°C | 29.173V~ 37.149V/ 800 VDC |
| 2 | OUTPUT VOLTAGE TOLERANCE (Max) | V1: -1.0%~ +1.0% | I/P: 1500VDC / 250 VDC O/P: FULL/ MIN. LOAD Ta:25°C | V1: -0.0655%~0.0717% |
| 3 | LINE REGULATION (Max) | V1: -0.5%~+0.5 % | I/P: 1500VDC / 250 VDC O/P: FULL LOAD Ta:25°C | V1: -0.00%~ 0.0717% |
| 4 | LOAD REGULATION (Max) | V1: -1.0%~ +1.0 % | I/P: 800VDC O/P:FULL ~MIN LOAD Ta:25°C | V1: -0.0655%~0.0624 % |
| 5 | OVER/UNDERSHOOT TEST | < +5% | I/P: 800 VDC O/P:FULL LOAD Ta:25°C | TEST: 1.90% |
| 6 | RIPPLE & NOISE (Max) | V1: 240mVp-p | I/P: 800 VDC O/P:FULL LOAD Ta:25°C | 31 mVp-p |
| | | high frequency : | low frequency : | |
| | |  |  | |
| 7 | DYNAMIC LOAD | V1: 3200mVp-p | I/P: 800VDC O/P: (1)FULL /MIN LOAD 50%DUTY / 120HZ (2)FULL /MIN LOAD 50%DUTY / 1KHZ (3)FULL /MIN LOAD 50%DUTY / 500HZ (4)FULL /MIN LOAD 50%DUTY / 3KHZ (5)FULL /MIN LOAD 50%DUTY / 8KHZ | (1) 760mVp-p (2) 650mVp-p (3) 610mVp-p (4) 458mVp-p (5) 550mVp-p (6) 560mVp-p |

(6)FULL /MIN LOAD 50%DUTY / 10KHZ
Ta:25°C

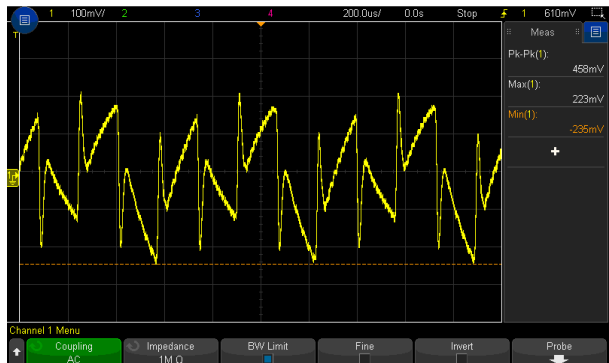
FULL /50% LOAD 50%DUTY / 120HZ



FULL /50% LOAD 50%DUTY / 1KHZ



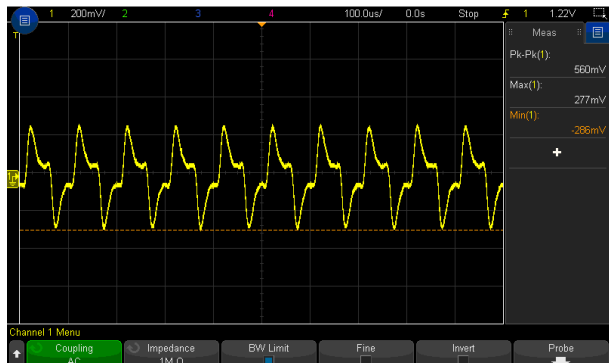
FULL /50% LOAD 50%DUTY / 3KHZ



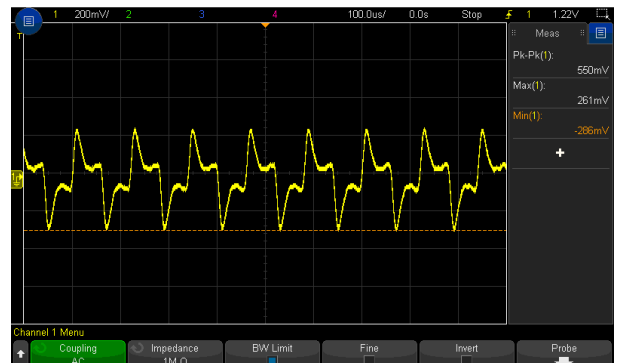
FULL /50% LOAD 50%DUTY / 500HZ



FULL /50% LOAD 50%DUTY / 10KHZ

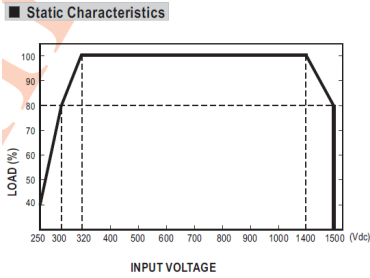


FULL /50% LOAD 50%DUTY / 8KHZ



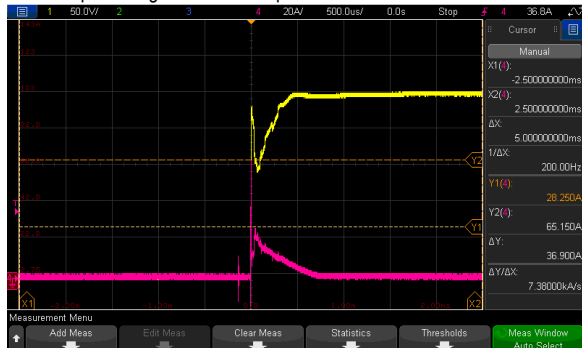
| | | | | |
|---|--------------------------------|--------|---|-----------------|
| 8 | EXERNAL CAPACITANCE LOAD(Max.) | 4000uF | I/P : 800VDC O/P : TESTING LOAD Ta : 25°C | TEST: <u>OK</u> |
|---|--------------------------------|--------|---|-----------------|

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|---------------------|---|---|---|
| 1 | INPUT VOLTAGE RANGE | 250VDC~ 1500 VDC  | I/P: TESTING O/P:FULL LOAD Ta:25°C I/P: LOW-LINE-0.2= 249.8V HIGH-LINE+3V= 1503V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec . OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE) | 231.48V~ 1400V/FULL LOAD 230.78V~ 1500 V/80% LOAD 228.88V~ 1500 V/40% LOAD TEST: <u>OK</u> |
| 2 | EFFICIENCY(TYP) | 88%/300VDC 90%/800VDC 87%/1500VDC | I/P: 300VDC (80% LOAD) I/P: 800VDC I/P: 1500VDC (80% LOAD) O/P:FULL LOAD Ta:25°C | 90.99%/300VDC 91.47%/800VDC 87.62%/1500VDC |
| 3 | INRUSH CURRENT(TYP) | 120A/300VDC 300A/800VDC 500A/1500VDC COLD START | I/P: 300VDC (80% LOAD) I/P: 800VDC I/P: 1500VDC (80% LOAD) O/P:FULL LOAD Ta:25°C | I = 28.25A/ 300VDC I = 91.25A/ 800VDC I = 175.325A/ 1500VDC |

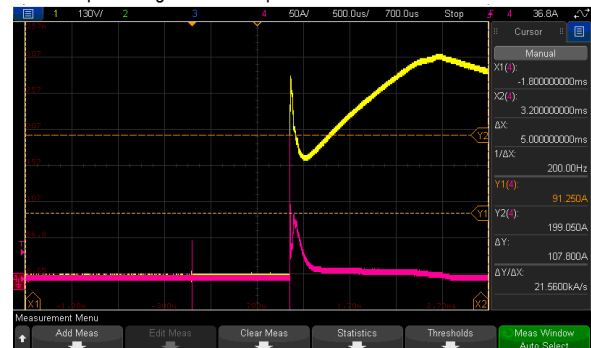
INPUT=250VDC @ TEST LOAD

CH1: DC Input Voltage CH4: Input current



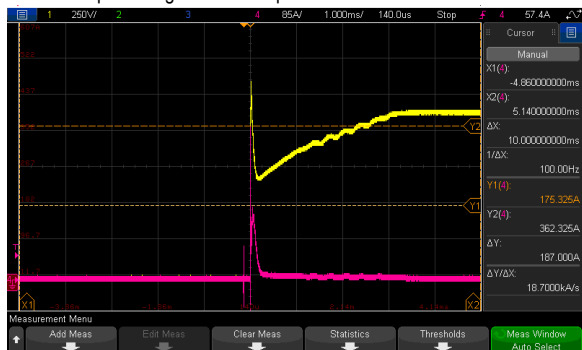
INPUT=800VDC @ FULL LOAD

CH1: DC Input Voltage CH4: Input current



INPUT=1500VDC @ TEST LOAD

CH1: DC Input Voltage CH4: Input current



PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|--------------------------------|--|---|--|
| 1 | OVER LOAD PROTECTION | 105 %~ 135 % RATED OUTPUT POWER Protection type: Hiccup mode when output voltage < 55%, recovers automatically after condition is removed; Constant current limiting, recovers automatically after fault condition is removed within 55% ~ 100% rated output voltage | I/P: 1400 VDC I/P: 800 VDC I/P: 320 VDC O/P: TESTING Ta: 25°C | 119.56%/ 1400 VDC 120.30%/ 800 VDC 119.56%/ 320 VDC PROTECTION TYPE : Hiccup mode when output voltage < 55%, recovers automatically after condition is removed; Constant current limiting, recovers automatically after fault condition is removed within 55% ~ 100% rated output voltage |
| 2 | OVER VOLTAGE PROTECTION | CH: 40V~48V Protection type : Hiccup mode, recovers automatically after fault condition is removed | I/P: 1500VDC I/P: 800VDC I/P: 250VDC O/P: MIN LOAD Ta: 25°C | 43.60V/ 1500 VDC 43.60V/ 800 VDC 43.60V/ 250 VDC PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed |
| 3 | OVER TEMPERATURE PROTECTION | SPEC: NO DAMAGE Protection type : Hiccup mode, recovers automatically after fault condition is removed | I/P: 250VDC I/P: 1500VDC O/P: FULL LOAD | O.T.P. Active OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed |
| 4 | SHORT PROTECTION | SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Hiccup mode, recovers automatically after fault condition is removed | I/P: 250VDC I/P: 1500VDC O/P: FULL LOAD Ta: 25°C | NO DAMAGE OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed |
| 5 | DC INPUT UNDER VOLTAGE LOCKOUT | Under voltage protection range: 200 ~ 225Vdc , Under voltage release range: 225 ~ 246.5Vdc | I/P: TESTING O/P: TEST LOAD Ta: 25°C | NO DAMAGE Under voltage protection range TEST: <u>215.11</u> Vdc , Under voltage release range TEST: <u>231.48</u> Vdc , |
| 6. | DC INPUT REVERSE POLARITY | By internal Bridge Diode, no damage, recovers automatically after fault condition removed | I/P: 1500 VDC O/P: FULL LOAD Ta: 25°C | TEST: <u>OK</u> NO DAMAGE, recovers automatically after fault condition is removed |



COMPONENT STRESS TEST

| N O | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|--------|---|-----------------------------------|---|--|
| 1 | PWM Transistor (D to S) or (C to E) Peak Voltage | Q1/Q2/Q3/Q4 Rated: 28 A/ 650 V | DC ON/OFF I/P: High-Line +3V = 1503V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C | Q1 VDS: (1) 518V (2) 522V (3) 522V (4) 514V (5) 510V (6) 518V (7) 526V Q2 VDS: (1) 510V (2) 510V (3) 514V (4) 506V (5) 499V (6) 514V (7) 522V Q3 VDS: (1) 514V (2) 522V (3) 518V (4) 518V (5) 518V (6) 522V (7) 526V Q4 VDS: (1) 510V (2) 518V (3) 518V (4) 510V (5) 514V (6) 518V (7) 522V |
| 2 | Diode Peak Voltage | Q100/Q103 Rated: 20 A/600 V | DC ON/OFF I/P: High-Line +3V =1503 V <u>Vo=Vmax</u> O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD Vo=Vnormal O/P: (1) Full Load Ta:25°C | Q100: VDS: <u>Vo=Vmax</u> (1) 307V (2) 356V (3) 315V (4) 311V (5) 313V (6) 315V (7) 307V (8) 307V Vo=Vnormal (1) 320V Q103: VDS: <u>Vo=Vmax</u> (1) 313V (2) 352V (3) 318V (4) 315V (5) 315V (6) 318V (7) 315V (8) 315V Vo=Vnormal (1) 308V |
| 3 | Input Capacitor Voltage | C5/C6/C7/C8 Rated: 120μ /420 V | I/P: High-Line +3V =1503V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue | C5 (1) 373V (2) 373V (3) 371V (4) 373V C6 (1) 373V (2) 373V (3) 373V (4) 373V |



| | | | | | |
|---|--------------------------|---|--|---|--|
| | | | Ta:25°C | C7 (1) 383V (2) 378V (3) 388V (4) 385V | C8 (1) 385V (2) 381V (3) 388V (4) 388V |
| 4 | Control IC Voltage Test | PWM IC U1 Rated:8.3V~ 28 V I/P IC U4 Rated: 6.5V~ 30 V IC U200 Rated:3.5V~ 36V | DC ON/OFF I/P: High-Line +3V =1503 V O/P: (1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P. (5) NO LOAD VRmin(LOW LINE) Ta:25°C | U1/U4: (1) 17.6V (2) 17.3V (3) 17.5V (4) 17.5V (5) 17.3V U200: (1) 21.4V (2) 21.4V (3) 21.4V (4) 33.0V (5) 19.1V | |
| 7 | Clamp Diode Peak Voltage | D1 / D2 / D3/ D4 Rated: 1000V /1 A | I/P: High-Line +3V =1503V DC ON/OFF O/P : (1) Dynamic Load 90%Duty/1KHz (2) Full load continue Ta: 25°C | D1: (1) 435V (2) 431V D3: (1) 447V (2) 443V | D2: (1) 435V (2) 431V D4: (1) 447V (2) 447V |

SAFETY TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|----------------------|---|--|--|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:4KVAC/min I/P-FG: 3.75 KVAC/min O/P-FG: 2KVAC/min | I/P-O/P: 4.4 KVAC/min I/P-FG: 4.125 KVAC/min O/P-FG: 2.4 KVAC/min Ta:25°C | I/P-O/P: 10.25 mA I/P-FG: 7.62 mA O/P-FG: 8.14 mA NO DAMAGE |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC > 100MΩ | I/P-O/P: 600 VDC Ta:25°C | I/P-O/P: 9999 MΩ NO DAMAGE |
| 3 | GROUNDING CONTINUITY | FG(PE) TO CHASSIS OR TRACE < 100 mΩ | 40A / 2min Ta:25°C | 5mΩ |

E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDITION | RESULT |
|----|------------|-----------------------------------|---|-------------------------------|
| 1 | RADIATION | BS EN/EN55032(CISPR32) CLASS A | I/P: 400VDC/800 VDC O/P:FULL LOAD Ta:25°C | PASS Test by certified Lab |
| 2 | CONDUCTION | BS EN/EN55032(CISPR32) CLASS A | I/P: 400VDC/800 VDC O/P:FULL LOAD | PASS Test by certified Lab |



| | | | | |
|---|---|---|---|---|
| | | | Ta:25°C | |
| 3 | E.S.D | BS EN/EN61000-4-2 Level 3, 8KV air Level 2, 4KV contact | I/P: 400VDC/800 VDC O/P:FULL LOAD Ta:25°C | <input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B |
| 4 | E.F.T | BS EN/EN61000-4-4 INPUT: 2KV | I/P: 400VDC/800 VDC O/P:FULL LOAD Ta:25°C | <input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B |
| 5 | SURGE | BS EN/EN61000-4-5 Level 4, 2KV/Vin+ ~ Vin-, 4KV Vin~FG | I/P: 400VDC/800 VDC O/P:FULL LOAD Ta:25°C | <input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B |
| 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 : RSDH-300-32 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 800 VDC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 800 VDC O/P : FULL LOAD Ta= 55 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25 °C</th> <th>HIGH AMBIENT Ta= 55 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>C2</td><td>51.4°C</td><td>78.3°C</td></tr> <tr><td>2</td><td>R5</td><td>56.8°C</td><td>82.9°C</td></tr> <tr><td>3</td><td>RTH3</td><td>58.7°C</td><td>83.4°C</td></tr> <tr><td>4</td><td>R84</td><td>61.1°C</td><td>88.1°C</td></tr> <tr><td>5</td><td>C11</td><td>56.9°C</td><td>83.8°C</td></tr> <tr><td>6</td><td>BD1</td><td>62.9°C</td><td>89.7°C</td></tr> <tr><td>7</td><td>BD2</td><td>65.5°C</td><td>92.5°C</td></tr> <tr><td>8</td><td>R50</td><td>71.0°C</td><td>98.8°C</td></tr> <tr><td>9</td><td>LF2</td><td>57.2°C</td><td>83.8°C</td></tr> <tr><td>10</td><td>C8</td><td>63.1°C</td><td>90.2°C</td></tr> <tr><td>11</td><td>C6</td><td>62.4°C</td><td>90.1°C</td></tr> <tr><td>12</td><td>C12</td><td>55.9°C</td><td>83.4°C</td></tr> <tr><td>13</td><td>R46</td><td>74.0°C</td><td>102.7°C</td></tr> <tr><td>14</td><td>D2</td><td>71.8°C</td><td>100.4°C</td></tr> <tr><td>15</td><td>D4</td><td>71.2°C</td><td>99.4°C</td></tr> <tr><td>16</td><td>R54</td><td>76.2°C</td><td>104.7°C</td></tr> <tr><td>17</td><td>C78</td><td>70.0°C</td><td>98.0°C</td></tr> </tbody> </table> | NO | Position | ROOM AMBIENT Ta= 25 °C | HIGH AMBIENT Ta= 55 °C | 1 | C2 | 51.4°C | 78.3°C | 2 | R5 | 56.8°C | 82.9°C | 3 | RTH3 | 58.7°C | 83.4°C | 4 | R84 | 61.1°C | 88.1°C | 5 | C11 | 56.9°C | 83.8°C | 6 | BD1 | 62.9°C | 89.7°C | 7 | BD2 | 65.5°C | 92.5°C | 8 | R50 | 71.0°C | 98.8°C | 9 | LF2 | 57.2°C | 83.8°C | 10 | C8 | 63.1°C | 90.2°C | 11 | C6 | 62.4°C | 90.1°C | 12 | C12 | 55.9°C | 83.4°C | 13 | R46 | 74.0°C | 102.7°C | 14 | D2 | 71.8°C | 100.4°C | 15 | D4 | 71.2°C | 99.4°C | 16 | R54 | 76.2°C | 104.7°C | 17 | C78 | 70.0°C | 98.0°C |
| NO | Position | ROOM AMBIENT Ta= 25 °C | HIGH AMBIENT Ta= 55 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | C2 | 51.4°C | 78.3°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | R5 | 56.8°C | 82.9°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | RTH3 | 58.7°C | 83.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | R84 | 61.1°C | 88.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | C11 | 56.9°C | 83.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | BD1 | 62.9°C | 89.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | BD2 | 65.5°C | 92.5°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | R50 | 71.0°C | 98.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | LF2 | 57.2°C | 83.8°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | C8 | 63.1°C | 90.2°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | C6 | 62.4°C | 90.1°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | C12 | 55.9°C | 83.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | R46 | 74.0°C | 102.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | D2 | 71.8°C | 100.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | D4 | 71.2°C | 99.4°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | R54 | 76.2°C | 104.7°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | C78 | 70.0°C | 98.0°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| | | NO | Position | ROOM AMBIENT Ta= 25 °C | HIGH AMBIENT Ta= 55 °C |
|---|---|---|----------|--|------------------------|
| | | 18 | U1 | 72.8°C | 100.7°C |
| | | 19 | T3 | 69.3°C | 97.6°C |
| | | 20 | U4 | 68.9°C | 97.7°C |
| | | 21 | Q9 | 68.5°C | 97.3°C |
| | | 22 | T1 coil | 82.6°C | 112.0°C |
| | | 23 | T1 core | 77.0°C | 105.5°C |
| | | 24 | R102 | 66.1°C | 95.0°C |
| | | 25 | C56 | 67.0°C | 94.7°C |
| | | 26 | TSW1 | 71.2°C | 99.5°C |
| | | 27 | T2 coil | 80.6°C | 109.5°C |
| | | 28 | T2 core | 78.2°C | 107.8°C |
| | | 29 | U200 | 63.8°C | 92.1°C |
| | | 30 | R101 | 68.8°C | 97.5°C |
| | | 31 | R232 | 67.5°C | 95.7°C |
| | | 32 | LF100 | 61.7°C | 91.0°C |
| | | 33 | C110 | 64.9°C | 93.5°C |
| | | 34 | C106 | 66.3°C | 94.2°C |
| | | 35 | C108 | 67.5°C | 96.0°C |
| | | 36 | C101 | 72.0°C | 100.8°C |
| | | 37 | U2 | 66.4°C | 94.9°C |
| | | 38 | D10 | 65.6°C | 93.3°C |
| | | 39 | Q1 | 72.9°C | 101.8°C |
| | | 40 | D218 | 78.0°C | 105.8°C |
| | | 41 | Q2 | 71.2°C | 100.1°C |
| | | 42 | Q3 | 72.1°C | 101.2°C |
| | | 43 | Q4 | 73.8°C | 103.1°C |
| | | 44 | D212 | 74.3°C | 102.9°C |
| | | 45 | D213 | 78.4°C | 107.5°C |
| | | 46 | D214 | 75.5°C | 103.8°C |
| | | 47 | D216 | 72.8°C | 100.7°C |
| | | 48 | D217 | 79.4°C | 107.5°C |
| | | 49 | D20 | 71.1°C | 99.4°C |
| | | 50 | ZNR3 | 57.9°C | 85.3°C |
| 2 | OVER LOAD BURN-IN TEST | NO DAMAGE 1 HOUR (MIN) | | I/P : 800 VDC O/P : 120.1%LOAD Ta : 25°C | TEST : OK |
| 3 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOUR | | I/P : 300 VDC / 1500 VDC O/P : 100% LOAD Ta= -5 °C O/P : 50% LOAD Ta= -45 °C | TEST : OK |
| 4 | HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST | AFTER 12 HOURS IN CHAMBER ON CONTROL 55 °C/95 %R.H NO DAMAGE | | I/P : 1503 VDC O/P : FULL LOAD Ta= 55 °C HUMIDITY= 95 %R.H | TEST : OK |



| | | | | |
|----|--------------------------|--|---|---|
| 5 | TEMPERATURE COEFFICIENT | ±0.03%/°C(0 ~ 55°C) | I/P : 800 VDC O/P : FULL LOAD | ± 0.006%/°C(0~55°C) |
| 6 | STORAGE TEMPERATURE TEST | -40~80°C | 1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC | |
| 7 | THERMAL SHOCK TEST | -40~55°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: 800 VDC / FULL LOAD DC ON 3sec/DC OFF 1sec TEST 1cycle: 800 VDC / FULL LOAD Burn In Test | |
| 8 | VIBRATION TEST | 10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes | 1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 4G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C | |
| 9 | CAPACITOR LIFE CYCLE | SUPPOSE C108 IS THE MOST CRITICAL COMPONENT | (1) I/P : 800VDC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 800VDC O/P : FULL LOAD Ta= 55 °C LIFE TIME (3) I/P : 800VDC O/P : 75% LOAD Ta= 55 °C LIFE TIME (4) I/P : 800VDC O/P : 50% LOAD Ta= 55 °C LIFE TIME | (1) 195593.3HRS (2) 26569.8HRS (3) 44977.2HRS (4) 80766.9HRS |
| 10 | MTBF | Conducted by Parts Stress Analysis Prediction 277.9K hrs min. Telcordia SR-332 (Bellcore) ; 99.1K hrs min. MIL-HDBK-217F (25°C) | | |
| 11 | Ongoing Reliability Test | I/P : 800VDC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30000 hours | | |

| TEST RESULT | TESTER | REVIEW | APPROVAL |
|-------------|--------|--------|----------|
| PASS | Yuwei | Liutt | Wangdz |

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