



Test Report : DDRH-30-15

30W High Reliable 150~1500Vdc Ultra Wide Input DC-DC Converter

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

■ SAFETY TEST

Safety Test

■ RELIABILITY TEST

Environment Test

DESIGN VERIFY TEST
OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|------------------|----------------|---|-----------------|---------|
| 1 | VOLTAGE ACCURACY | -2.0% ~ +2.0 % | I/P:800VDC O/P:FULL LOAD Ta:25°C | +0.02% | P |
| 2 | RIPPLE & NOISE | 100 mVp-p | I/P:800VDC O/P:FULL LOAD Ta:25°C | 60mV | P |
| 3 | LINE REGULATION | -1.0% ~ +1.0% | I/P:150VDC~1500VDC O/P: FULL LOAD Ta:25°C | -0.03% ~ +0.13% | P |
| 4 | LOAD REGULATION | -1.0% ~ +1.0% | I/P:800VDC O/P:10% LOAD~FULL LOAD Ta:25°C | -0.09% ~ +0.08% | P |
| 5 | HOLD UP TIME | 16ms min. | I/P:800VDC O/P:FULL LOAD Ta:25°C | 49.6ms | P |
| 6 | SETUP TIME | 2s max. | I/P:800VDC O/P: FULL LOAD Ta:25°C | 81.2ms | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|---------------------|-------------------------------------|---|---|---------|
| 1 | INPUT VOLTAGE RANGE | 150 VDC ~1500 VDC | I/P:TESTING O/P:FULL LOAD Ta:25°C | 135.2VDC ~1500 VDC | P |
| 2 | EFFICIENCY | 88% | I/P:800VDC O/P:FULL LOAD Ta:25°C | 93.77% | P |
| 3 | DC CURRENT | 50mA / FULL LOAD 0.2mA / NO LOAD | I/P:800VDC O/P:NO / FULL LOAD Ta:25°C | 39.66mA / FULL LOAD 0.155 mA / NO LOAD | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|-------------------------|-------------|---|---------------------------------------|---------|
| 1 | SHORT PROTECTION | CONTINUOUS | I/P:1500VDC O/P:FULL LOAD Ta:25°C | HICCUP MODE AUTO-RECOVER | P |
| 2 | OVER LOAD PROTECTION | 110% ~ 300% | I/P:800VDC O/P:TESTING Ta:25°C | 180.5% HICCUP MODE AUTO-RECOVER | P |
| 3 | OVER VOLTAGE PROTECTION | YES | I/P:800VDC O/P: MIN LOAD Ta:25°C | HICCUP MODE AUTO-RECOVER | P |

| | | | | | |
|---|---------------------------|--|---|--------------------------|---|
| 4 | DC INPUT REVERSE POLARITY | NO DAMAGE | I/P:800VDC O/P: FULL LOAD Ta:25°C | NO DAMAGE | P |
| 5 | UNDER VOLTAGE LOCKOUT | START-UP VOLTAGE 144Vdc(max) SHUTDOWN VOLTAGE 132Vdc(min) | I/P: TESTING O/P: FULL LOAD Ta:25°C | 143.8VDC 135.2VDC | P |

■ SAFETY TEST

SAFETY TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|----------------------|-----------------------|--------------------------------|-------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:4.0KVAC/min | I/P-O/P:4.0KVAC/min Ta:25°C | I/P-O/P: 0.002mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>1000MΩ | I/P-O/P:500 VDC Ta:25°C | I/P-O/P>1000MΩ NO DAMAGE | P |

■ RELIABILITY TEST

ENVIRONMENT TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|------------------------------|---|---|-----------|---------|
| 1 | TEMPERATURE RISE TEST | 1. ROOM AMBIENT BURN-IN : 4HRS I/P:800VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:800VDC O/P:FULL LOAD Ta=50°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:800VDC O/P:50% LOAD Ta=70°C | | | P |
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| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS | I/P:800VDC O/P: FULL LOAD Ta= -40°C | TEST : OK | |

OTHER

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|-----------|---|----------------|--------|---------|
| 1 | MTBF | MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 2.0322 M.T.B.F : 492,089 HRS | | | P |

| TEST RESULT | TESTER | APPROVAL |
|-------------|--------------|-------------|
| PASS | ARCHEN HSIAO | PETER CHENG |