



Test Report : SKM10W8-12

10W 1"x1" Package 8:1 Ultra-Wide DC-DC Regulated 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 | VERDICT |
|----|------------------|---------------|---|-----------------|---------|
| 1 | VOLTAGE ACCURACY | -1.5% ~ +1.5% | I/P:48VDC O/P:FULL LOAD Ta:25°C | -0.34% | P |
| 2 | RIPPLE & NOISE | 120 mVp-p | I/P:48VDC O/P:FULL LOAD Ta:25°C | 14mV | P |
| 3 | LINE REGULATION | -0.5% ~ +0.5% | I/P:9VDC~75VDC O/P:FULL LOAD Ta:25°C | +0.00% ~ +0.00% | P |
| 4 | LOAD REGULATION | -0.5% ~ +0.5% | I/P:48VDC O/P:0% LOAD~FULL LOAD Ta:25°C | -0.03% ~ +0.04% | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------|-------------------------------------|--|--------------------------------------|---------|
| 1 | EFFICIENCY | 85% | I/P:48VDC O/P:FULL LOAD Ta:25°C | 85.33% | P |
| 2 | DC CURRENT | 242mA / FULL LOAD 10mA / NO LOAD | I/P:48VDC O/P:NO / FULL LOAD Ta:25°C | 242mA / FULL LOAD 4.1mA / NO LOAD | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|--|---|---|---------|
| 1 | SHORT PROTECTION | CONTINUOUS | I/P:75VDC O/P:FULL LOAD Ta:25°C | CONTINUOUS, AUTOMATIC RECOVERY | P |
| 2 | OVER LOAD PROTECTION | 110~200% | I/P:48VDC O/P:TESTING Ta:25°C | 155.5% HICCUP MODE AUTO-RECOVER | P |
| 3 | CASE TEMPERATURE | +110°C max | I/P:48VDC O/P:TESTING Ta: TESTING | OK AUTOMATIC RECOVERY | P |
| 4 | OVER VOLTAGE PROTECTION | YES | I/P: 48VDC O/P: MIN LOAD Ta:25°C | PROTECTION TYPE : CLAMP BY TVS DIODE | P |
| 5 | UNDER VOLTAGE LOCKOUT | START-UP 8.3V(Type) SHUTDOWN OLTAAGE 8.0V(Type) | I/P:TESTING O/P:FULL LOAD Ta:25°C | 8.34 VDC 8.04 VDC | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------|--|---------------------------------------|--|---------|
| 1 | REMOTE CONTROL | POWER ON : R.C. ~ -VIN >3.5~75VDC OR OPEN CIRCUIT POWER OFF : R.C. ~ -VIN <1VDC OR SHORT | I/P:48VDC O/P:100% LOAD Ta:25°C | POWER ON : R.C.>1.38VDC OR OPEN POWER OFF : R.C.<1.36VDC OR SHORT | P |
| 2 | TRIM CONTROL | +10%~ -10% (Typ) Trim ~ +Vout Trim DOWN Trim ~ -Vout Trim UP Using 1M ohm VR | I/P:48VDC O/P:FULL LOAD Ta:25°C | Trim DOWN -9.9% Trim UP +10.0% | P |

SAFETY TEST

SAFETY TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|-----------------------|---------------------------------|-------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:3000 VDC/min | I/P-O/P:3000 VDC/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 | | | | | | | | | | |
|---|------------------------------|--|--|-----------|----|----------|---|---|---|---|------|--------|--------|---------|
| 1 | TEMPERATURE RISE TEST | 1. ROOM AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:FULL LOAD Ta=73°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:50% LOAD Ta=85°C | | | | | | | | | | | | |
| <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>NO</th> <th>Position</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE</td> <td>46.8°C</td> <td>94.8°C</td> <td>100.0°C</td> </tr> </tbody> </table> | | | | | NO | Position | 1 | 2 | 3 | 1 | CASE | 46.8°C | 94.8°C | 100.0°C |
| NO | Position | 1 | 2 | 3 | | | | | | | | | | |
| 1 | CASE | 46.8°C | 94.8°C | 100.0°C | | | | | | | | | | |
| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS | I/P:48VDC O/P: FULL LOAD Ta= -40°C | TEST : OK | | | | | | | | | | |

OTHER

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT |
|----|-----------|--|----------------|--------|
| 1 | MTBF | MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 0.41999 M.T.B.F : 2,381KHRS | | |

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