



Test Report : SMU02M-09N

2W DC-DC Unregulated Single output 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 | -3.0% ~ +3.0 % (Max) | I/P:12VDC O/P:FULL LOAD Ta:25°C | -0.27% | P |
| 2 | RIPPLE & NOISE | 100 mVp-p (Max) | I/P:13.2VDC O/P:FULL LOAD Ta:25°C | 14 mV | P |
| 3 | LINE REGULATION | -12% ~ +12 % | I/P:10.8VDC~13.2VDC O/P:FULL LOAD Ta:25°C | -10.74% ~ +10.85% | P |
| 4 | LOAD REGULATION | -8.0% ~ +8.0% | I/P:12VDC O/P:10% LOAD~FULL LOAD Ta:25°C | -2.50% ~ +2.31% | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------|--------------------------------------|--|--|---------|
| 1 | EFFICIENCY | 88% | I/P:12VDC O/P:FULL LOAD Ta:25°C | 89.04% | P |
| 2 | DC CURRENT | 189 mA / FULL LOAD 8 mA / NO LOAD | I/P:12VDC O/P:NO / FULL LOAD Ta:25°C | 186.0 mA / FULL LOAD 3.5 mA / NO LOAD | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------------|-------------|---|-----------------------------------|---------|
| 1 | SHORT PROTECTION | CONTINUOUS | I/P:13.2VDC O/P:FULL LOAD Ta:25°C | CONTINUOUS, AUTOMATIC RECOVERY | P |
| 2 | CASE TEMPERATURE | +115°C max | I/P:12VDC O/P:TESTING Ta: TESTING | OK AUTOMATIC RECOVERY | P |

SAFETY TEST
SAFETY TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|----------------------|---------------------------------|-------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:1500 VDC/min | I/P-O/P:1500 VDC/min Ta:25°C | I/P-O/P: 0.002mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ | I/P-O/P:500 VDC Ta:25°C | I/P-O/P>100MΩ 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:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:12VDC O/P:FULL LOAD Ta=85°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:12VDC O/P:60% LOAD Ta=105°C | | | | | | | | | | | | |
| | | <table border="1"> <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>40.4°C</td> <td>97.2°C</td> <td>111.2°C</td> </tr> </tbody> </table> | | | NO | Position | 1 | 2 | 3 | 1 | CASE | 40.4°C | 97.2°C | 111.2°C |
| NO | Position | 1 | 2 | 3 | | | | | | | | | | |
| 1 | CASE | 40.4°C | 97.2°C | 111.2°C | | | | | | | | | | |
| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS | I/P:12VDC 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 : 0.5 M.T.B.F : 2,000KHRS | | |

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