



Test Report : SPA01W8-05

1W SIP Package 8:1 Ultra-Wide Input 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 | -2.0% ~ +2.0 % (Max) | I/P:24VDC O/P:FULL LOAD Ta:25°C | -0.35% | P |
| 2 | RIPPLE & NOISE | 100 mVp-p (Max) | I/P:24VDC O/P:FULL LOAD Ta:25°C | 10 mV | 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:24VDC O/P:0% LOAD~FULL LOAD Ta:25°C | -0.13% ~ +0.13% | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------|--|--|---|---------|
| 1 | EFFICIENCY | 78% | I/P:24VDC O/P:FULL LOAD Ta:25°C | 78.72% | P |
| 2 | DC CURRENT | 53 mA / FULL LOAD 4 mA / NO LOAD | I/P:24VDC O/P:NO / FULL LOAD Ta:25°C | 52.4 mA / FULL LOAD 2.9 mA / NO LOAD | P |
| 3 | UNDER VOLTAGE LOCKOUT | START-UP 8.8V SHUTDOWN VOLTAGE 8.0V | I/P:TESTING O/P:FULL LOAD Ta:25°C | 7.68 VDC 6.75 VDC | 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 | 110~350% | I/P:24VDC O/P:TESTING Ta:25°C | 163.0% HICCUP MODE AUTO-RECOVER | P |
| 3 | CASE TEMPERATURE | +110°C max | I/P:24VDC 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>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:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:FULL LOAD Ta=90°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:50% LOAD Ta=95°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>40.3°C</td> <td>97.7°C</td> <td>103.6°C</td> </tr> </tbody> </table> | | | NO | Position | 1 | 2 | 3 | 1 | CASE | 40.3°C | 97.7°C | 103.6°C |
| NO | Position | 1 | 2 | 3 | | | | | | | | | | |
| 1 | CASE | 40.3°C | 97.7°C | 103.6°C | | | | | | | | | | |
| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS | I/P:24VDC 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 : 2.0 M.T.B.F : >500KHRS | | |

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