



# Test Report : SCW12W8-15

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12W DIP 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        | SPECIFICATION | TEST CONDITION                                | RESULT          | VERDICT |
|----|------------------|---------------|-----------------------------------------------|-----------------|---------|
| 1  | VOLTAGE ACCURACY | -2.0% ~ +2.0% | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C         | -0.79%          | P       |
| 2  | RIPPLE & NOISE   | 100 mVp-p     | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C         | 8 mV            | P       |
| 3  | LINE REGULATION  | -0.5% ~ +0.5% | I/P:9VDC~75VDC<br>O/P:FULL LOAD<br>Ta:25°C    | +0.00% ~ +0.0%  | P       |
| 4  | LOAD REGULATION  | -0.5% ~ +0.5% | I/P:24VDC<br>O/P:0% LOAD~FULL LOAD<br>Ta:25°C | -0.04% ~ +0.04% | P       |

### INPUT FUNCTION TEST

| NO | TEST ITEM  | SPECIFICATION                         | TEST CONDITION                             | RESULT                                   | VERDICT |
|----|------------|---------------------------------------|--------------------------------------------|------------------------------------------|---------|
| 1  | EFFICIENCY | 87%                                   | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C      | 88.09%                                   | P       |
| 2  | DC CURRENT | 575 mA / FULL LOAD<br>10 mA / NO LOAD | I/P:24VDC<br>O/P:NO / FULL LOAD<br>Ta:25°C | 562.8 mA / FULL LOAD<br>4.6 mA / NO LOAD | P       |

### PROTECTION FUNCTION TEST

| NO | TEST ITEM               | SPECIFICATION                               | TEST CONDITION                          | RESULT                                  | VERDICT |
|----|-------------------------|---------------------------------------------|-----------------------------------------|-----------------------------------------|---------|
| 1  | SHORT PROTECTION        | CONTINUOUS                                  | I/P:75VDC<br>O/P:FULL LOAD<br>Ta:25°C   | CONTINUOUS,<br>AUTOMATIC RECOVERY       | P       |
| 2  | OVER LOAD PROTECTION    | 110~230%                                    | I/P:24VDC<br>O/P:TESTING<br>Ta:25°C     | 183.8%<br>HICCUP MODE<br>AUTO-RECOVER   | P       |
| 3  | CASE TEMPERATURE        | +110°C max                                  | I/P:24VDC<br>O/P:TESTING<br>Ta: TESTING | OK<br>AUTOMATIC RECOVERY                | P       |
| 4  | OVER VOLTAGE PROTECTION | YES                                         | I/P: 24VDC<br>O/P: MIN LOAD<br>Ta:25°C  | PROTECTION TYPE :<br>CLAMP BY TVS DIODE | P       |
| 5  | UNDER VOLTAGE LOCKOUT   | START-UP 8.8V<br>SHUTDOWN OLTAGE 8.0V(Type) | I/P:TESTING<br>O/P:FULL LOAD<br>Ta:25°C | 8.56 VDC<br>8.04 VDC                    | P       |

## CONTROL FUNCTION TEST

| NO | TEST ITEM      | SPECICATION                                                                                          | TEST CONDITION                        | RESULT                                                                     | VERDICT |
|----|----------------|------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------|---------|
| 1  | REMOTE CONTROL | POWER ON :<br>R.C. ~ -VIN >2.5~30VDC<br>OR OPEN CIRCUIT<br>POWER OFF :<br>R.C. ~ -VIN <1VDC OR SHORT | I/P:24VDC<br>O/P:100% LOAD<br>Ta:25°C | POWER ON :<br>R.C.>1.40VDC OR OPEN<br>POWER OFF :<br>R.C.<1.30VDC OR SHORT | P       |

## SAFETY TEST0

### 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<br>Ta:25°C | I/P-O/P: 0.002mA<br>NO DAMAGE | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>1000MΩ | I/P-O/P:500 VDC<br>Ta:25°C      | I/P-O/P>1000MΩ<br>NO DAMAGE   | P       |

## RELIABILITY TEST

### ENVIRONMENT TEST

| NO | TEST ITEM                    | SPECICATION                                                                                                                                                                                                | TEST CONDITION                                                                                                                                                                    | RESULT    |          |   |   |   |   |      |        |         |         |  |
|----|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|---|---|---|---|------|--------|---------|---------|--|
| 1  | TEMPERATURE RISE TEST        | 1. ROOM AMBIENT BURN-IN : 4HRS<br>I/P:24VDC O/P:FULL LOAD Ta=25°C<br>2. HIGH AMBIENT BURN-IN : 4HRS<br>I/P:24VDC O/P:FULL LOAD Ta=70°C<br>3. HIGH AMBIENT BURN-IN : 4HRS<br>I/P:24VDC O/P:50% LOAD Ta=85°C | <table border="1"> <tr> <th>NO</th><th>Position</th><th>1</th><th>2</th><th>3</th></tr> <tr> <td>1</td><td>CASE</td><td>57.4°C</td><td>102.4°C</td><td>102.1°C</td></tr> </table> | NO        | Position | 1 | 2 | 3 | 1 | CASE | 57.4°C | 102.4°C | 102.1°C |  |
| NO | Position                     | 1                                                                                                                                                                                                          | 2                                                                                                                                                                                 | 3         |          |   |   |   |   |      |        |         |         |  |
| 1  | CASE                         | 57.4°C                                                                                                                                                                                                     | 102.4°C                                                                                                                                                                           | 102.1°C   |          |   |   |   |   |      |        |         |         |  |
| 2  | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS                                                                                                                                                                                      | I/P:24VDC<br>O/P: FULL LOAD<br>Ta= -40°C                                                                                                                                          | TEST : OK |          |   |   |   |   |      |        |         |         |  |

### OTHER

| NO | TEST ITEM | SPECICATION                                                              | TEST CONDITION | RESULT |
|----|-----------|--------------------------------------------------------------------------|----------------|--------|
| 1  | MTBF      | MIL-HDBK-217F,GB,25°C<br>TOTAL FAILURE RATE : 3.333<br>M.T.B.F : 300KHRS |                |        |

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