



Test Report : SKMW40G-15

40W 1"x1" Package 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 | -1.0% ~ +1.0 % | I/P:48VDC O/P:FULL LOAD Ta:25°C | -0.06% | P |
| 2 | RIPPLE & NOISE | 75 mVp-p | I/P:48VDC O/P:FULL LOAD Ta:25°C | 65mV | P |
| 3 | LINE REGULATION | -0.2% ~ +0.2% | I/P:18VDC~75VDC O/P:FULL LOAD Ta:25°C | -0.09% ~ +0.00% | P |
| 4 | LOAD REGULATION | -0.5% ~ +0.5% | I/P:48VDC O/P:0% LOAD~FULL LOAD Ta:25°C | -0.03% ~ +0.07% | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|---------------|---------------------------------------|--|---------------------------------------|---------|
| 1 | EFFICIENCY | 88% | I/P:48VDC O/P:FULL LOAD Ta:25°C | 88.71% | P |
| 2 | DC CURRENT | 940 mA / FULL LOAD 10 mA / NO LOAD | I/P:48VDC O/P:NO / FULL LOAD Ta:25°C | 935mA / FULL LOAD 6.14mA / NO LOAD | P |
| 3 | SURGE VOLTAGE | 100 VDC(100mS max.) | I/P: TESTING O/P:FULL LOAD Ta:25°C | NO DAMAGE | P |
| 4 | START UP TIME | 30 ms max. | I/P:48VDC O/P:FULL LOAD Ta:25°C | 21.2mS | 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 | NO DAMAGE AUTO-RECOVER | P |
| 2 | OVER LOAD PROTECTION | 110~200% | I/P:48VDC O/P:TESTING Ta:25°C | 170.4 % HICCUP MODE AUTO-RECOVER | P |
| 3. | OVER VOLTAGE PROTECTION | YES | I/P:48VDC O/P:FULL LOAD Ta:25°C | Clamp by Zener diode | P |
| 4 | OVER TEMPERATURE PROTECTION | +110°C THERMAL SHUTDOWN | I/P:48VDC O/P:TESTING Ta: TESTING | OK AUTOMATIC RECOVERY | P |
| 5 | UNDER VOLTAGE LOCKOUT | START-UP 17.5V SHUTDOWN VOLTAGE 17V | I/P:TESTING O/P:FULL LOAD Ta:25°C | 16.98VDC 16.53VDC | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDITC |
|----|----------------|---|---------------------------------------|--|---------|
| 1 | REMOTE CONTROL | Power on : R.C. ~ - Vin>3.5~12Vdc or open circuit Power off : R.C. ~ - Vin <1.2Vdc or short | I/P:48VDC O/P:FULL LOAD Ta:25°C | Power on : R.C>3.0Vdc or Open Power off : R.C<1.2Vdc 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 -10.2% Trim UP +9.6% | P |

SAFETY TEST

SAFETY TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------------|----------------------|-------------------------------|-------------------------------|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P:2K VDC/min | I/P-O/P:2K 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 | VERDICT | | | | | | | | | | |
|----|------------------------------|--|--|-----------|---------|----------|---|---|---|---|------|---------|---------|---------|--|
| 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=30°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:50% LOAD Ta=60°C | | | P | | | | | | | | | | |
| | | <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>107.7°C</td> <td>112.7°C</td> <td>115.7°C</td> </tr> </tbody> </table> | | | NO | Position | 1 | 2 | 3 | 1 | CASE | 107.7°C | 112.7°C | 115.7°C | |
| NO | Position | 1 | 2 | 3 | | | | | | | | | | | |
| 1 | CASE | 107.7°C | 112.7°C | 115.7°C | | | | | | | | | | | |
| 2 | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 4 HOURS | I/P:48VDC O/P: FULL LOAD Ta= -40°C | TEST : OK | P | | | | | | | | | | |

OTHER

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------|--|----------------|--------|---------|
| 1 | MTBF | MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 1.785714 M.T.B.F : 560K HRS | | | P |

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