



# Test Report : SKMW15W8-12

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15W 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	-2.0% ~ +2.0%	I/P:24VDC O/P:FULL LOAD Ta:25°C	-0.74%	P
2	RIPPLE & NOISE	150 mVp-p	I/P:24VDC O/P:FULL LOAD Ta:25°C	35mV	P
3	LINE REGULATION	-0.5% ~ +0.5%	I/P:9VDC~75VDC O/P:FULL LOAD Ta:25°C	+0.01% ~ -0.01%	P
4	LOAD REGULATION	-0.5% ~ +0.5%	I/P:24VDC O/P:0% LOAD-FULL LOAD Ta:25°C	-0.01% ~ +0.02%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	87%	I/P:24VDC O/P:FULL LOAD Ta:25°C	87.77%	P
2	DC CURRENT	718mA / FULL LOAD 7mA / NO LOAD	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	702mA / FULL LOAD 5.98mA / 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	110-220%	I/P:24VDC O/P:TESTING Ta:25°C	173.6% HICCUP MODE AUTO-RECOVER	P
3	CASE TEMPERATURE	+110°C max	I/P:24VDC O/P:TESTING Ta: TESTING	OK AUTOMATIC RECOVERY	P
4	OVER VOLTAGE PROTECTION	YES	I/P: 24VDC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : CLAMP BY TVS DIODE	P
5	UNDER VOLTAGE LOCKOUT	START-UP 8.8V(Type) SHUTDOWN OLTAAGE 8.0V(Type)	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.53 VDC 7.65 VDC	P

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	POWER ON : R.C. ~ -VIN >2.5~30VDC OR OPEN CIRCUIT POWER OFF : R.C. ~ -VIN <1VDC OR SHORT	I/P:24VDC O/P:100% LOAD Ta:25°C	POWER ON : R.C.>2.12VDC OR OPEN POWER OFF : R.C.<1.62VDC 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 -10.7% Trim UP +9.2%	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:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:FULL LOAD Ta=71°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:50% LOAD Ta=85°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>57.3°C</td> <td>96.7°C</td> <td>99.4°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	57.3°C	96.7°C	99.4°C
NO	Position	1	2	3										
1	CASE	57.3°C	96.7°C	99.4°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 : 1.16279 M.T.B.F : 860KHRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG