



# Test Report : SKM50W8-03

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50W 2"x1" 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  
Other

**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	-1.57%	P
2	RIPPLE & NOISE	150 mVp-p	I/P:24VDC O/P:FULL LOAD Ta:25°C	78mV	P
3	LINE REGULATION	-0.5% ~ +0.5%	I/P:9VDC~75VDC O/P:FULL LOAD Ta:25°C	+0.10% ~ -0.10%	P
4	LOAD REGULATION	-1.0% ~ +1.0%	I/P:24VDC O/P:0% LOAD~FULL LOAD Ta:25°C	-0.85% ~ +0.84%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	88%	I/P:24VDC O/P:FULL LOAD Ta:25°C	88.41%	P
2	DC CURRENT	1562mA / FULL LOAD 10mA / NO LOAD	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	1523mA / FULL LOAD 3.26mA / 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	110~180%	I/P:24VDC O/P:TESTING Ta:25°C	151.9% 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 7.5V(Type)	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.48VDC 7.32 VDC	P

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	POWER ON : R.C. ~ -VIN >2.5~75VDC 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.>1.81VDC OR OPEN POWER OFF : R.C.<1.53VDC 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 +10.0%	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=50°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:50% LOAD Ta=75°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>64.9°C</td> <td>89.9°C</td> <td>92.9°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	64.9°C	89.9°C	92.9°C
NO	Position	1	2	3										
1	CASE	64.9°C	89.9°C	92.9°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 : 2.1645 M.T.B.F : >462KHRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG