



# Test Report : SKMW40F-15

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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:24VDC O/P:FULL LOAD Ta:25°C	+0.13%	P
2	RIPPLE & NOISE	75 mVp-p	I/P:24VDC O/P:FULL LOAD Ta:25°C	65mV	P
3	LINE REGULATION	-0.2% ~ +0.2%	I/P:9VDC~36VDC O/P:FULL LOAD Ta:25°C	-0.04% ~ -0.20%	P
4	LOAD REGULATION	-0.5% ~ +0.5%	I/P:24VDC O/P:0% LOAD~FULL LOAD Ta:25°C	+0.04% ~ +0.09%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	91%	I/P:24VDC O/P:FULL LOAD Ta:25°C	91.74%	P
2	DC CURRENT	1820 mA / FULL LOAD 12 mA / NO LOAD	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	1799mA / FULL LOAD 4.79mA / NO LOAD	P
3	START UP TIME	30 ms max.	I/P:24VDC O/P:FULL LOAD Ta:25°C	17.9mS	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	CONTINUOUS	I/P:36VDC O/P:FULL LOAD Ta:25°C	NO DAMAGE AUTO-RECOVER	P
2	OVER LOAD PROTECTION	110~200%	I/P:24VDC O/P:TESTING Ta:25°C	169.1 % HICCUP MODE AUTO-RECOVER	P
3.	OVER VOLTAGE PROTECTION	YES	I/P:TESTING O/P:FULL LOAD Ta:25°C	Clamp by Zener diode	P
4	OVER TEMPERATURE PROTECTION	+110°C THERMAL SHUTDOWN	I/P:24VDC O/P:TESTING Ta: TESTING	OK AUTOMATIC RECOVERY	P
5	UNDER VOLTAGE LOCKOUT	START-UP 8.8V SHUTDOWN VOLTAGE 8.5V	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.45VDC 8.12VDC	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:24VDC 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:24VDC O/P:FULL LOAD Ta:25°C	Trim DOWN -10.1% Trim UP +9.3%	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:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:FULL LOAD Ta=30°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC 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>83.7°C</td> <td>88.7°C</td> <td>96.6°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	83.7°C	88.7°C	96.6°C	
NO	Position	1	2	3											
1	CASE	83.7°C	88.7°C	96.6°C											
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 4 HOURS	I/P:24VDC O/P: FULL LOAD Ta= -40°C	TEST : OK	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