



# Test Report : SKM30F-12N

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30W 2"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

Other Test

## DESIGN VERIFY TEST

### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDITC
1	VOLTAGE ACCURACY	-2% ~ +2 %	I/P:12VDC O/P:FULL LOAD Ta:25°C	-0.11%	P
2	RIPPLE & NOISE	150 mVp-p	I/P:12VDC O/P:FULL LOAD Ta:25°C	19 mV	P
3	LINE REGULATION	-0.2% ~ +0.2%	I/P:9VDC~36VDC O/P:FULL LOAD Ta:25°C	-0.03% ~ +0.01%	P
4	LOAD REGULATION	-0.5% ~ +0.5%	I/P:12VDC O/P: 0% LOAD~FULL LOAD Ta:25°C	-0.10% ~ +0.12%	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDITC
1	INPUT VOLTAGE RANGE	9 VDC ~36 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	6.72 VDC ~ 36 VDC	P
2.	EFFICIENCY	87%	I/P:12VDC O/P:FULL LOAD Ta:25°C	88.07%	P
3	DC CURRENT	2907 mA / FULL LOAD 30 mA / NO LOAD	I/P:12VDC O/P:NO / FULL LOAD Ta:25°C	2840 mA / FULL LOAD 4.67 mA / NO LOAD	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDITC
1	SHORT PROTECTION	CONTINUOUS	I/P:36VDC O/P:FULL LOAD Ta:25°C	AUTOMATIC RECOVERY	P
2	OVER LOAD PROTECTION	110~230%	I/P:12VDC O/P:TESTING Ta:25°C	177.2 % HICCUP MODE AUTO-RECOVER	P
3.	INPUT OVER VOLTAGE	40VDC typ.	I/P:TESTING O/P:FULL LOAD Ta:25°C	38.5 VDC SHTDOWN OUTPUT VOLTAGE AUTO-RECOVER	P

## CONTROL FUNCTION TEST

	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	Power on : >2.5~5.0Vdc or open ircuit Power off : R.C <1.0Vdc or short	I/P:12VDC O/P:FULL LOAD Ta:25°C	Power on : R.C>1.1Vdc or Open Power off : R.C<0.9Vdc or Short	P
2	TRIM	-10%~ +10% (Typ) Trim ~ +Vout Trim DOWN Trim ~ -Vout Trim UP Using 1M ohms VR	I/P:12VDC O/P:FULL LOAD Ta:25°C	Trim DOWN -10.7% Trim UP +9.3%	P

## SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDITC
1	WITHSTAND VOLTAGE	I/P-O/P:3.0K VDC/min	I/P-O/P:3.0K 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 : 8HRS I/P:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC O/P:FULL LOAD Ta=60°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC O/P:50% LOAD Ta=80°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>68.4°C</td> <td>103.4°C</td> <td>91.4°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	68.4°C	103.4°C	91.4°C	
NO	Position	1	2	3											
1	CASE	68.4°C	103.4°C	91.4°C											
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 4 HOURS	I/P:12VDC O/P: FULL LOAD Ta= -40°C	TEST : OK	P										

## OTHER

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDITC
1	MTBF	MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 3.93557 M.T.B.F : 254,092.80 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG