



# Test Report : SKMW20G-12

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20W 1"x1" Package DC-DC Regulated Converter

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control 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	-1.5 % ~ +1.5 % (Max)	I/P:48VDC O/P:FULL LOAD Ta:25°C	-0.22 %	P
2	RIPPLE & NOISE	100 mVp-p (Max)	I/P:48VDC O/P:FULL LOAD Ta:25°C	33 mV	P
3	LINE REGULATION	-0.2% ~ +0.2% (Max)	I/P:18VDC~75VDC O/P:FULL LOAD Ta:25°C	-0.01% ~ +0.01%	P
4	LOAD REGULATION	-0.2% ~ +0.2% (Max)	I/P:48VDC O/P:NO LOAD-FULL LOAD Ta:25°C	-0.01 % ~ +0.02 %	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	89 % (Typ)	I/P:48VDC O/P:FULL LOAD Ta:25°C	89.2 %	P
2	DC CURRENT	463 mA / FULL LOAD (Max) 8 mA / NO LOAD (Max)	I/P:48VDC O/P:NO / FULL LOAD Ta:25°C	461 mA / FULL LOAD 4 mA / NO LOAD	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110%~170% LOAD (Typ)	I/P:48VDC O/P:TESTING Ta:25°C	154%	P
2	INPUT UNDER VOLTAGE LOCKOUT	Power Up 17V (Typ) Power Down 16V (Typ)	I/P:TESTING O/P: 10% LOAD Ta:25°C	Vin turn off : 16.05V Vin turn on : 16.89V	P
3	SHORT PROTECTION	CONTINUOUS	I/P:75VDC O/P:FULL LOAD Ta:25°C	NO DAMAGE OK	P

**CONTROL FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	Power on : R.C >3.5Vdc~Vin or open Power off : R.C <1.2Vdc or short (-Vin)	I/P:48VDC O/P:10% LOAD Ta:25°C	OK	P

2	TRIM CONTROL	+10%~ -10% (Typ) Trim ~ +Vout Trim DOWN Trim ~ -Vout Trim UP Using 10k ohm VR	I/P:48VDC O/P:10% LOAD Ta:25°C	Trim DOWN -9.93 % Trim UP +9.95 %	P
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## SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:1500 VDC/min	I/P-O/P:1500 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=65°C			P								
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE</td> <td>38.0°C</td> <td>79.4°C</td> </tr> </tbody> </table>		NO	Position	1	2	1	CASE	38.0°C	79.4°C		
NO	Position	1	2										
1	CASE	38.0°C	79.4°C										
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 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 : 1.128 M.T.B.F : 886,572 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	PETER CHENG	VINCENT ZENG