



# Test Report : SPRN010-15

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1W SIP 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

**DESIGN VERIFY TEST**
**OUTPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-3.0 % ~ +3.0 % (Max)	I/P:48VDC O/P:FULL LOAD Ta:25°C	+0.82%	P
2	RIPPLE & NOISE	75 mVp-p (Max)	I/P:48VDC O/P:FULL LOAD Ta:25°C	7mV	P
3	LINE REGULATION	-1.0% ~ +1.0% (Max)	I/P:45.6VDC~52.8VDC O/P:FULL LOAD Ta:25°C	-0.03% ~ +0.04%	P
4	LOAD REGULATION	-1.0% ~ +1.0% (Max)	I/P:48VDC O/P:10% LOAD~FULL LOAD Ta:25°C	-0.05% ~ +0.03%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	45.6 VDC ~52.8 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	45.0VDC ~52.8VDC	P
2	EFFICIENCY	67% (Typ)	I/P:48VDC O/P:FULL LOAD Ta:25°C	67.16%	P
3	DC CURRENT	32 mA / FULL LOAD (Max) 8 mA / NO LOAD (Max)	I/P:48VDC O/P:NO / FULL LOAD Ta:25°C	30.98 mA / FULL LOAD 6.96 mA / NO LOAD	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	Current Limit Protection (60s max.)	I/P:52.8VDC O/P:FULL LOAD Ta:25°C	Current Limit Protection NO DAMAGE	P

**SAFETY TEST**
**SAFETY TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:1.5K VDC/min	I/P-O/P:1.5K 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:48VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:48VDC O/P:FULL LOAD Ta=71°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:48VDC O/P:60% LOAD Ta=85°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>54.2°C</td> <td>97.4°C</td> <td>109.9°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	54.2°C	97.4°C	109.9°C	
NO	Position	1	2	3											
1	CASE	54.2°C	97.4°C	109.9°C											
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 4 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 : 0.80807 M.T.B.F : 1,237,522.68 HRS			P
<b>TEST RESULT</b>		<b>TESTER</b>		<b>APPROVAL</b>	
PASS		ARCHEN HSIAO		PETER CHENG	