



# Test Report : SPRN01M-05

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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

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

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-3.0 % ~ +3.0% (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	+0.18%	P
2	RIPPLE & NOISE	75 mVp-p (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	9mV	P
3	LINE REGULATION	-1.0% ~ +1.0% (Max)	I/P:11.4VDC-13.2VDC O/P:FULL LOAD Ta:25°C	+0.02% ~ -0.07%	P
4	LOAD REGULATION	-1.0% ~ +1.0% (Max)	I/P:12VDC O/P:10% LOAD-FULL LOAD Ta:25°C	-0.17% ~ +0.16%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	11.4 VDC ~13.2 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	10.5VDC ~13.2VDC	P
2	EFFICIENCY	72% (Typ)	I/P:12VDC O/P:FULL LOAD Ta:25°C	72.19%	P
3	DC CURRENT	116 mA / FULL LOAD (Max) 15 mA / NO LOAD (Max)	I/P:12VDC O/P:NO / FULL LOAD Ta:25°C	115 mA / FULL LOAD 10.4 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:13.2VDC 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:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC O/P:FULL LOAD Ta=71°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC 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>47.9°C</td> <td>90.8°C</td> <td>104.7°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	47.9°C	90.8°C	104.7°C	
NO	Position	1	2	3											
1	CASE	47.9°C	90.8°C	104.7°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	VERDICT
1	MTBF	MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 0.80807 M.T.B.F : 1,237,522.68 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	Archen Hsiao	VINCENT ZENG