



# Test Report : SPB09A-05

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9W 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	-1.5 % ~ +1.5 % (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	4.9745 -0.51%	P
2	RIPPLE & NOISE	100 mVp-p (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	35mV	P
3	LINE REGULATION	-0.5% ~ +0.5% (Max)	I/P:9VDC~18VDC O/P:FULL LOAD Ta:25°C	4.9692 4.9745 4.9689 -0.11% ~ -0.11%	P
4	LOAD REGULATION	-0.5% ~ +0.5% (Max)	I/P:12VDC O/P:10% LOAD~FULL LOAD Ta:25°C	4.9745 4.9924 5.0097 -0.36% ~ +0.35%	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	9 VDC ~18 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.7VDC ~18.0 VDC	P
2	EFFICIENCY	83% (Typ)	I/P:12VDC O/P:FULL LOAD Ta:25°C	84.8%	P
3	DC CURRENT	800 mA / FULL LOAD (Max) 12 mA / NO LOAD (Max)	I/P:12VDC O/P:NO / FULL LOAD Ta:25°C	779 mA / FULL LOAD 10.44 mA / NO LOAD	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	CONTINUOUS	I/P:18VDC O/P:FULL LOAD Ta:25°C	HICCUP MODE AUTO-RECOVER	P
2	OVER LOAD PROTECTION	120% ~ 250% (Typ)	I/P:12VDC O/P:TESTING Ta:25°C	170.0% HICCUP MODE AUTO-RECOVER	P

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	Power on : R.C. ~ - Vin>2.5V or open circuit Power off : R.C. ~ - Vin <0.8Vdc or short	I/P:12VDC O/P:FULL LOAD Ta:25°C	Power on : R.C>2.5Vdc or Open Power off : R.C<0.8Vdc	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=60°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC O/P:55% LOAD Ta=80°C 4. HIGH AMBIENT BURN-IN : 8HRS I/P:12VDC O/P:40% LOAD Ta=90°C			P												
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE</td> <td>63.5°C</td> <td>98.9°C</td> <td>100.6°C</td> <td>105.3°C</td> </tr> </tbody> </table>				NO	Position	1	2	3	4	1	CASE	63.5°C	98.9°C	100.6°C	105.3°C
NO	Position	1	2	3	4												
1	CASE	63.5°C	98.9°C	100.6°C	105.3°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 : 3.75905 M.T.B.F : 266,024.80 HRS			P
<b>TEST RESULT</b>		<b>TESTER</b>		<b>APPROVAL</b>	
PASS		ARCHEN HSIAO		PETER CHENG	