



# Test Report : SPA01A-15

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1W DC-DC Regulated Single Output 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	-2 % ~ +2 % (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	-0.06 %	P
2	RIPPLE & NOISE	80 mVp-p (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	15 mV	P
3	LINE REGULATION	-0.5 % ~ +0.5 % (Max)	I/P:9VDC~18VDC O/P:FULL LOAD Ta:25°C	-0.01 % ~ +0.05 %	P
4	LOAD REGULATION	-0.5 % ~ +0.5 % (Max)	I/P:12VDC O/P:MIN~FULL LOAD Ta:25°C	-0.01 % ~ +0.03 %	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	9VDC~18VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	7.4 ~ 18VDC	P
2	EFFICIENCY	79 % (Typ)	I/P:12VDC O/P:FULL LOAD Ta:25°C	79.04 %	P
3	DC CURRENT	110 mA / FULL LOAD (Max) 20 mA / NO LOAD (Max)	I/P:12VDC O/P:NO / FULL LOAD Ta:25°C	105.7 mA / FULL LOAD 17.6 mA / NO LOAD	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	130%~200 % (Typ)	I/P:12VDC O/P:TESTING Ta:25°C	191 % HICCUP MODE AUTO-RECOVER	P
2	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P:18VDC O/P:FULL LOAD Ta:25°C	NO DAMAGE HICCUP MODE AUTO-RECOVER	P

**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: 0.02mA 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 : 15HRS I/P:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 45HRS I/P:12VDC O/P:FULL LOAD Ta=85°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>32.5°C</td> <td>95.2°C</td> </tr> </tbody> </table>		NO	Position	1	2	1	CASE	32.5°C	95.2°C		
NO	Position	1	2										
1	CASE	32.5°C	95.2°C										
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 13 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-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 1.91624 M.T.B.F : 521855 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	PETER CHENG	VINCENT TSENG