



# Test Report : MDD02M-09

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2W SIP Package DC-DC Medical Grade Unregulated Converter

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

## ■ SAFETY TEST

Safety Test

## ■ RELIABILITY TEST

Environment Test

Other Test

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

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-5%~+5% (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	V1 0.95% V2 1.33%	P
2	RIPPLE & NOISE	75 mVp-p (Max)	I/P:12VDC O/P:FULL LOAD Ta:25°C	V1 29mV V2 26mV	P
3	LINE REGULATION	-12% ~ +12% (Max)	I/P:10.8VDC~13.2VDC O/P:FULL LOAD Ta:25°C	V1 -10.59% ~ +10.61% V2 -10.55% ~ +10.57%	P
4	LOAD REGULATION	-10% ~ +10% (Max)	I/P:12VDC O/P:MINI LOAD-FULL LOAD Ta:25°C	V1 -2.75% ~ +2.65% V2 -2.53% ~ +2.44%	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	83 % (Typ)	I/P:12VDC O/P:FULL LOAD Ta:25°C	83.3%	P
2	DC CURRENT	205 mA / FULL LOAD (Max) 21 mA / NO LOAD (Max)	I/P:12VDC O/P:NO / FULL LOAD Ta:25°C	198.12mA / FULL LOAD 20.26mA / NO LOAD	P

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	MOMENTARY 3sec. max	I/P:12VDC O/P:FULL LOAD Ta:25°C	NO DAMAGE OK	P

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

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:6000 VDC/min	I/P-O/P:6000 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
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## ■ RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT								
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 8 HRS I/P:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8 HRS 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>38.5°C</td> <td>103.9°C</td> </tr> </tbody> </table>				NO	Position	1	2	1	CASE	38.5°C	103.9°C
NO	Position	1	2										
1	CASE	38.5°C	103.9°C										
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 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,Full Load TOTAL FAILURE RATE : 0.2340 M.T.B.F : 4274000 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN	VINCENT ZENG