



# Test Report : MDD03G-12

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3W DIP Package DC-DC Medical Grade 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
1	VOLTAGE ACCURACY	-2.0% ~ +2.0 % (Max)	I/P: 24VDC O/P:FULL LOAD Ta:25°C	-0.96% -0.68%
2	RIPPLE & NOISE	150 mVp-p (Max)	I/P:24VDC O/P:FULL LOAD Ta:25°C	40 mV 40 mV
3	LINE REGULATION	-0.5% ~ +0.5% (Max)	I/P:18VDC~75VDC O/P:FULL LOAD Ta:25°C	-0.01% ~ -0.03% +0.01% ~ -0.01%
4	LOAD REGULATION	-0.5% ~ +0.5% (Max)	I/P:24VDC O/P:10% LOAD~FULL LOAD Ta:25°C	+0.00% ~ -0.03% -0.03% ~ +0.06%

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	18 VDC ~75 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	16.41 VDC ~75.0 VDC
2	EFFICIENCY	80% (Typ)	I/P:24VDC O/P:FULL LOAD Ta:25°C	81.21%
3	DC CURRENT	158 mA / FULL LOAD (Max) 15 mA / NO LOAD (Max)	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	158 mA / FULL LOAD 19.2 mA / NO LOAD

**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	CONTINUOUS	I/P:75VDC O/P:FULL LOAD Ta:25°C	HICCUP MODE AUTO-RECOVER
2	OVER LOAD PROTECTION	110% ~ 250% (Typ)	I/P:24VDC O/P:TESTING Ta:25°C	213.1% HICCUP MODE AUTO-RECOVER

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

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P:6K VDC/min	I/P-O/P:6K VDC/min Ta:25°C	I/P-O/P: 0.002mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>1000MΩ	I/P-O/P:500 VDC Ta:25°C	I/P-O/P>1000MΩ NO DAMAGE

**RELIABILITY TEST**
**ENVIRONMENT TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT													
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:FULL LOAD Ta=71°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:75% LOAD Ta=80°C 4. HIGH AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:50% LOAD Ta=90°C															
		<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>41.0°C</td> <td>84.3°C</td> <td>91.2°C</td> <td>99.2°C</td> </tr> </tbody> </table>				NO	Position	1	2	3	4	1	CASE	41.0°C	84.3°C	91.2°C	99.2°C
NO	Position	1	2	3	4												
1	CASE	41.0°C	84.3°C	91.2°C	99.2°C												
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 4 HOURS	I/P:24VDC O/P: FULL LOAD Ta= -40°C	TEST : OK													

**OTHER**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	MTBF	MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 2.19842 M.T.B.F : 454,871.72 HRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG