



Test Report : MDD01M-09

1W 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 -0.50% V2 -2.77% | P |
| 2 | RIPPLE & NOISE | 75 mVp-p (Max) | I/P:12VDC O/P:FULL LOAD Ta:25°C | V1 38mV V2 36mV | P |
| 3 | LINE REGULATION | -12% ~ +12% (Max) | I/P:10.8VDC~13.2VDC O/P:FULL LOAD Ta:25°C | V1 -10.42% ~ +10.38% V2 -10.46% ~ +10.32% | P |
| 4 | LOAD REGULATION | -10% ~ +10% (Max) | I/P:12VDC O/P:MINI LOAD-FULL LOAD Ta:25°C | V1 -1.94% ~ +1.82% V2 -1.80% ~ +1.69% | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------|---|--|--|---------|
| 1 | EFFICIENCY | 82 % (Typ) | I/P:12VDC O/P:FULL LOAD Ta:25°C | 83.1% | P |
| 2 | DC CURRENT | 105 mA / FULL LOAD (Max) 14 mA / NO LOAD (Max) | I/P:12VDC O/P:NO / FULL LOAD Ta:25°C | 99.8mA / FULL LOAD 12.2mA / 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 |
|---|----------------------|----------------------|----------------------------|----------------------------|---|

■ 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>40.4°C</td> <td>94.1°C</td> </tr> </tbody> </table> | | | | NO | Position | 1 | 2 | 1 | CASE | 40.4°C | 94.1°C |
| NO | Position | 1 | 2 | | | | | | | | | | |
| 1 | CASE | 40.4°C | 94.1°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 : 0.2297 M.T.B.F : 4354000 HRS | | | P |

| TEST RESULT | TESTER | APPROVAL |
|-------------|--------|--------------|
| PASS | ARCHEN | VINCENT ZENG |