



# Test Report : SBTN01N-12

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1W SMD Package DC-DC 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 | -2%~+2%           | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C            | -0.70%            | P       |
| 2  | RIPPLE & NOISE   | 75mVp-p (Max)     | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C            | 24mVp-p           | P       |
| 3  | LINE REGULATION  | -12% ~ +12% (Max) | I/P:21.6VDC ~26.4VDC<br>O/P:FULL LOAD<br>Ta:25°C | -10.45% ~ +10.48% | P       |
| 4  | LOAD REGULATION  | -8% ~ +8% (Max)   | I/P:24VDCC<br>O/P:FULL ~MIN LOAD<br>Ta:25°C      | -0.95 ~ 1.06%     | P       |

**INPUT FUNCTION TEST**

| NO | TEST ITEM  | SPECICATION                    | TEST CONDITION                        | RESULT      | VERDICT |
|----|------------|--------------------------------|---------------------------------------|-------------|---------|
| 1  | EFFICIENCY | 79%                            | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C | 79.91%      | P       |
| 2  | DC CURRENT | 54mA FULL LOAD<br>11mA NO LOAD | I/P:24VDC<br>O/P:FULL LOAD<br>Ta:25°C | 52mA<br>9mA | P       |

**PROTECTION FUNCTION TEST**

| NO | TEST ITEM        | SPECICATION | TEST CONDITION                          | RESULT    | VERDICT |
|----|------------------|-------------|---|-----------|---------|
| 1  | SHORT PROTECTION | MOMENTARY   | I/P:26.4VDC<br>O/P:FULL LOAD<br>Ta:25°C | MOMENTARY | P       |

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

| NO | TEST ITEM            | SPECICATION          | TEST CONDITION                 | RESULT                      | VERDICT |
|----|----------------------|----------------------|--------------------------------|-----------------------------|---------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P:1.5KVDC/min  | I/P-O/P:1.5KVDC/min<br>Ta:25°C | I/P-O/P:0.02mA<br>NO DAMAGE | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ | I/P-O/P:500VDC<br>Ta:25°C      | I/P-O/P:>100MΩ<br>NO DAMAGE | P       |

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

| NO | TEST ITEM                    | SPECICATION   | TEST CONDITION                              | RESULT    | VERDICT  |     |   |   |   |      |        |        |        |  |  |
|----|------------------------------|---|---|-----------|----------|-----|---|---|---|------|--------|--------|--------|--|--|
| 1  | TEMPERATURE RISE TEST        | 1. ROOM AMBIENT BURN-IN : 4HRS<br>I/P:24 VDC O/P:100% LOAD Ta=25°C<br>2. HI AMBIENT BURN-IN : 10HRS<br>I/P: 24 VDC O/P:100% LOAD Ta=85°C  |   |           | P        |     |   |   |   |      |        |        |        |  |  |
|    |                              | <table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>P/N</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE</td> <td>CENTER</td> <td>38.3°C</td> <td>97.7°C</td> </tr> </tbody> </table> |   | NO        | Position | P/N | 1 | 2 | 1 | CASE | CENTER | 38.3°C | 97.7°C |  |  |
| NO | Position                     | P/N   | 1   | 2         |          |     |   |   |   |      |        |        |        |  |  |
| 1  | CASE                         | CENTER  | 38.3°C                                      | 97.7°C    |          |     |   |   |   |      |        |        |        |  |  |
| 2  | LOW TEMPERATURE TURN ON TEST | TURN ON AFTER 2 HOURS   | I/P : 24VDC<br>O/P : 100% LOAD<br>Ta= -40°C | TEST : OK | P        |     |   |   |   |      |        |        |        |  |  |

**OTHER**

| NO | TEST ITEM | SPECICATION  | TEST CONDITION | RESULT | VERDICT |
|----|-----------|--|----------------|--------|---------|
| 1  | MTBF      | MIL-KDBK-217F NOTICES 2 PARTS COUNT<br>TOTAL FAILURE RATE : 1.13390<br>M.T.B.F : 881914.32 HRS |                |        | P       |

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