



Test Report : DKM10A-05

10W 1"x1" Package DC-DC Regulated Converter

■ DESIGN VERIFY TEST

Output Function Test
Input Function Test
Protection Function Test
Control Function Test

■ SAFETY TEST

Safety Test

■ RELIABILITY TEST

Environment Test

DESIGN VERIFY TEST
OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------------|-----------------------|---|--|---------|
| 1 | VOLTAGE ACCURACY | -1.5 % ~ +1.5 % (Max) | I/P:12VDC O/P:FULL LOAD Ta:25°C | V1 +0.18 % V2 +0.22 % | P |
| 2 | RIPPLE & NOISE | 50 mVp-p (Max) | I/P:12VDC O/P:FULL LOAD Ta:25°C | V1 26.9 mV V2 22.5 mV | P |
| 3 | LINE REGULATION | -0.2% ~ +0.2% (Max) | I/P:9VDC-18VDC O/P:FULL LOAD Ta:25°C | V1 -0.060% ~ +0.010% V2 -0.100% ~ +0.060% | P |
| 4 | LOAD REGULATION | -1% ~ +1% (Max) | I/P:12VDC O/P:NO LOAD-FULL LOAD Ta:25°C | V1 -0.04 % ~ +0.04 % V2 -0.06 % ~ +0.06 % | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|------------|---|--|--------------------------------------|---------|
| 1 | EFFICIENCY | 84 % (Typ) | I/P:12VDC O/P:FULL LOAD Ta:25°C | 84.8 % | P |
| 2 | DC CURRENT | 985 mA / FULL LOAD (Max) 40 mA / NO LOAD (Max) | I/P:12VDC O/P:NO / FULL LOAD Ta:25°C | 985mA / FULL LOAD 21 mA / NO LOAD | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|-----------------------------|--|---|---|---------|
| 1 | OVER LOAD PROTECTION | 110%~140% LOAD (Typ) | I/P:12VDC O/P:TESTING Ta:25°C | 137% | P |
| 2 | INPUT UNDER VOLTAGE LOCKOUT | Power Up 8.8V (Typ) Power Down 8.0V (Typ) | I/P:TESTING O/P: 10% LOAD Ta:25°C | Vin turn off : 8.13V Vin turn on : 8.72V | P |
| 3 | SHORT PROTECTION | CONTINUOUS | I/P:18VDC O/P:FULL LOAD Ta:25°C | NO DAMAGE OK | P |

CONTROL FUNCTION TEST

| NO | TEST ITEM | SPECICATION | TEST CONDITION | RESULT | VERDICT |
|----|----------------|--|--------------------------------------|--------|---------|
| 1 | REMOTE CONTROL | Power on : R.C >5.5Vdc~75Vdc or open Power off : R.C <1.2Vdc or short | I/P:12VDC O/P:10% LOAD Ta:25°C | OK | 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: 0.002mA 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 : 12HRS I/P:12VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 12HRS I/P:12VDC O/P:FULL LOAD Ta=71°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>29.6°C</td> <td>76.1°C</td> </tr> </tbody> </table> | | NO | Position | 1 | 2 | 1 | CASE | 29.6°C | 76.1°C | | |
| NO | Position | 1 | 2 | | | | | | | | | | |
| 1 | CASE | 29.6°C | 76.1°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 TOTAL FAILURE RATE : 0.810 M.T.B.F : 1,233,957 HRS | | | P |

| TEST RESULT | TESTER | APPROVAL |
|-------------|------------|--------------|
| PASS | ALROY WANG | VINCENT ZENG |