



# Test Report : DKM10W8-05

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10W 1"x1" Package 8:1 Ultra-Wide DC-DC 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	VERDICT
1	VOLTAGE ACCURACY	-1.5% ~ +1.5%	I/P:48VDC O/P:FULL LOAD Ta:25°C	V1: -0.10% V2: +0.06%	P
2	RIPPLE & NOISE	120 mVp-p	I/P:48VDC O/P:FULL LOAD Ta:25°C	V1: 12 mV V2: 12 mV	P
3	LINE REGULATION	-0.5% ~ +0.5%	I/P:9VDC~75VDC O/P:FULL LOAD Ta:25°C	V1: +0.01% ~ +0.0% V2: +0.00% ~ +0.02%	P
4	LOAD REGULATION	-0.5% ~ +0.5%	I/P:48VDC O/P:0% LOAD~FULL LOAD Ta:25°C	V1: -0.06% ~ +0.02% V2: -0.02% ~ +0.06%	P
5	CROSS REGULATION	-5% ~ +5.0%	I/P:48VDC O/P:25%~FULL LOAD Ta:25°C	V1: +1.30% V2: +1.32%	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	84%	I/P:48VDC O/P:FULL LOAD Ta:25°C	84.70%	P
2	DC CURRENT	251mA / FULL LOAD 10mA / NO LOAD	I/P:48VDC O/P:NO / FULL LOAD Ta:25°C	244.95mA / FULL LOAD 2.5 mA / NO LOAD	P

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	CONTINUOUS	I/P:75VDC O/P:FULL LOAD Ta:25°C	CONTINUOUS, AUTOMATIC RECOVERY	P
2	OVER LOAD PROTECTION	110~200%	I/P:48VDC O/P:TESTING Ta:25°C	150.3% HICCUP MODE AUTO-RECOVER	P
3	CASE TEMPERATURE	+110°C max	I/P:48VDC O/P:TESTING Ta: TESTING	OK AUTOMATIC RECOVERY	P
4	OVER VOLTAGE PROTECTION	YES	I/P: 48VDC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : CLAMP BY TVS DIODE	P
5	UNDER VOLTAGE LOCKOUT	START-UP 8.3V(Type) SHUTDOWN OLTAGE 8.0V(Type)	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.41 VDC 8.08 VDC	P

## CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	POWER ON : R.C. ~ -VIN >3.5~75VDC OR OPEN CIRCUIT POWER OFF : R.C. ~ -VIN <1VDC OR SHORT	I/P:48VDC O/P:100% LOAD Ta:25°C	POWER ON : R.C.>1.39VDC OR OPEN POWER OFF : R.C.<1.34VDC OR SHORT	P

## ■ SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:3000 VDC/min	I/P-O/P:3000 VDC/min Ta:25°C	I/P-O/P: 0.002mA NO DAMAGE	P
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	P

## ■ RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT										
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:FULL LOAD Ta=73°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:48VDC O/P:50% LOAD Ta=85°C												
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>NO</th> <th>Position</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CASE</td> <td>53.5°C</td> <td>101.5°C</td> <td>102.7°C</td> </tr> </tbody> </table>					NO	Position	1	2	3	1	CASE	53.5°C	101.5°C	102.7°C
NO	Position	1	2	3										
1	CASE	53.5°C	101.5°C	102.7°C										
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 4 HOURS	I/P:48VDC 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 : 0.41999 M.T.B.F : 2,381KHRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG