



# Test Report : DCW20W8-12

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20W DIP Package 8:1 Ultra-Wide Input 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	-2.0% ~ +2.0%	I/P:24VDC O/P:FULL LOAD Ta:25°C	V1: -1.44% V2: -1.38%	P
2	RIPPLE & NOISE	120 mVp-p	I/P:24VDC O/P:FULL LOAD Ta:25°C	V1: 21 mV V2: 18 mV	P
3	LINE REGULATION	-0.5% ~ +0.5%	I/P:9VDC~75VDC O/P:FULL LOAD Ta:25°C	V1: +0.08% ~ +0.11% V2: +0.11% ~ +0.06%	P
4	LOAD REGULATION	-0.5% ~ +0.5%	I/P:24VDC O/P:0% LOAD~FULL LOAD Ta:25°C	V1: -0.08% ~ +0.04% V2: -0.08% ~ +0.01%	P
5	CROSS REGULATION	-5% ~ +5.0%	I/P:24VDC O/P:25%~FULL LOAD Ta:25°C	V1: +1.41% V2: +1.37%	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	87%	I/P:24VDC O/P:FULL LOAD Ta:25°C	87.42%	P
2	DC CURRENT	958 mA / FULL LOAD 10 mA / NO LOAD	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	936.0 mA / FULL LOAD 8.3 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	110~190%	I/P:24VDC O/P:TESTING Ta:25°C	156.0% HICCUP MODE AUTO-RECOVER	P
3	CASE TEMPERATURE	+110°C max	I/P:24VDC O/P:TESTING Ta: TESTING	OK AUTOMATIC RECOVERY	P
4	OVER VOLTAGE PROTECTION	YES	I/P: 24VDC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : CLAMP BY TVS DIODE	P
5	UNDER VOLTAGE LOCKOUT	START-UP 8.8V(Type) SHUTDOWN OLTAGE 8.0V(Type)	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.61 VDC 7.48 VDC	P

## CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	POWER ON : R.C. ~ -VIN >2.5~30VDC OR OPEN CIRCUIT POWER OFF : R.C. ~ -VIN <1VDC OR SHORT	I/P:24VDC O/P:100% LOAD Ta:25°C	POWER ON : R.C.>1.99VDC OR OPEN POWER OFF : R.C.<1.54VDC OR SHORT	P

## SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	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	SPECIFICATION	TEST CONDITION	RESULT										
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:FULL LOAD Ta=60°C 3. HIGH AMBIENT BURN-IN : 4HRS I/P:24VDC O/P:50% LOAD Ta=80°C												
<table border="1"> <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>69.4°C</td> <td>104.4°C</td> <td>103.8°C</td> </tr> </tbody> </table>					NO	Position	1	2	3	1	CASE	69.4°C	104.4°C	103.8°C
NO	Position	1	2	3										
1	CASE	69.4°C	104.4°C	103.8°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	SPECIFICATION	TEST CONDITION	RESULT
1	MTBF	MIL-HDBK-217F,GB,25°C TOTAL FAILURE RATE : 1.72443 M.T.B.F : >570KHRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG