



# Test Report : RSDW60F-12

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60W 2"x1" Package Reliable Railway DC-DC 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
1	VOLTAGE ACCURACY	-1.0% ~ +1.0 % (Max)	I/P:24VDC O/P:FULL LOAD Ta:25°C	+0.23%
2	RIPPLE & NOISE	150 mVp-p (Max)	I/P:24VDC O/P:FULL LOAD Ta:25°C	35mV
3	LINE REGULATION	-0.2% ~ +0.2% (Max)	I/P:9VDC~36VDC O/P:FULL LOAD Ta:25°C	+0.01% ~ -0.02%
4	LOAD REGULATION	-0.5% ~ +0.5% (Max)	I/P:24VDC O/P:0% LOAD~FULL LOAD Ta:25°C	-0.05% ~ +0.07%

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	9 VDC ~36 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	8.37VDC ~36 VDC
2	EFFICIENCY	91% (Typ)	I/P:24VDC O/P:FULL LOAD Ta:25°C	91.78%
3	DC CURRENT	2.85A / FULL LOAD (Max) 15 mA / NO LOAD (Max)	I/P:24VDC O/P:NO / FULL LOAD Ta:25°C	2.71A / FULL LOAD 9.18 mA / NO LOAD

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	CONTINUOUS	I/P:36VDC O/P:FULL LOAD Ta:25°C	HICCUP MODE AUTO-RECOVER
2	OVER LOAD PROTECTION	125% ~ 210% (Typ)	I/P:24VDC O/P:TESTING Ta:25°C	165.0% HICCUP MODE AUTO-RECOVER
3	OVER VOLTAGE PROTECTION	YES	I/P: 24VDC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : CLAMP BY ZENER DIODE
4	UNDER VOLTAGE LOCKOUT	8VDC(Typ)	I/P: TESTING O/P: MIN LOAD Ta:25°C	8.37VDC

## CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	REMOTE CONTROL	Power on : R.C. ~ - Vin>3.0~12Vdc or open circuit Power off : R.C. ~ - Vin <1.2Vdc or short	I/P:24VDC O/P:FULL LOAD Ta:25°C	Power on : R.C>3.0Vdc or Open Power off : R.C<1.2Vdc or short
2	TRIM CONTROL	+10%~ -10% (Typ) Trim ~ +Vout Trim DOWN Trim ~ -Vout Trim UP Using 1.5M ohm VR	I/P:24VDC O/P: FULL LOAD Ta:25°C	Trim DOWN -10.23 % Trim UP +9.60 %

## SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P:1.6K VDC/min	I/P-O/P:1.6K VDC/min Ta:25°C	I/P-O/P: 0.002mA NO DAMAGE
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

## RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT										
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:FULL LOAD Ta=50°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:24VDC O/P:50% LOAD Ta=75°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>71.2°C</td> <td>96.2°C</td> <td>98.4°C</td> </tr> </tbody> </table>			NO	Position	1	2	3	1	CASE	71.2°C	96.2°C	98.4°C
NO	Position	1	2	3										
1	CASE	71.2°C	96.2°C	98.4°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 : 4.87804 M.T.B.F : 205KHRS		

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	PETER CHENG