



# Test Report : RDDW60G-15

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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:48VDC O/P:FULL LOAD Ta:25°C	+0.42% +0.25%
2	RIPPLE & NOISE	125 mVp-p (Max)	I/P:48VDC O/P:FULL LOAD Ta:25°C	30mV 30mV
3	LINE REGULATION	-0.5% ~ +0.5% (Max)	I/P:18VDC~75VDC O/P:FULL LOAD Ta:25°C	+0.01% ~ -0.01% +0.01% ~ +0.01%
4	LOAD REGULATION	-1.0% ~ +1.0% (Max)	I/P:48VDC O/P:0% LOAD~FULL LOAD Ta:25°C	-0.05% ~ -0.08% -0.01% ~ +0.13%

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	18 VDC ~75 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	16.66VDC ~36 VDC
2	EFFICIENCY	90% (Typ)	I/P:48VDC O/P:FULL LOAD Ta:25°C	90.33%
3	DC CURRENT	1.45A / FULL LOAD (Max) 15 mA / NO LOAD (Max)	I/P:48VDC O/P:NO / FULL LOAD Ta:25°C	1.38A / FULL LOAD 7.1 mA / NO LOAD

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT
1	SHORT PROTECTION	CONTINUOUS	I/P:75VDC O/P:FULL LOAD Ta:25°C	HICCUP MODE AUTO-RECOVER
2	OVER LOAD PROTECTION	125% ~ 210% (Typ)	I/P:48VDC O/P:TESTING Ta:25°C	201.0% HICCUP MODE AUTO-RECOVER
3	OVER VOLTAGE PROTECTION	YES	I/P: 48VDC O/P: MIN LOAD Ta:25°C	PROTECTION TYPE : CLAMP BY ZENER DIODE
4	UNDER VOLTAGE LOCKOUT	16VDC(Typ)	I/P: TESTING O/P: MIN LOAD Ta:25°C	16.66VDC

## 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:48VDC O/P:FULL LOAD Ta:25°C	Power on : R.C>3.0Vdc or Open Power off : R.C<1.2Vdc or short

## ■ 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:48VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:48VDC O/P:FULL LOAD Ta=45°C 3. HIGH AMBIENT BURN-IN : 8HRS I/P:48VDC O/P:50% LOAD Ta=70°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>80.3°C</td> <td>100.3°C</td> <td>99.1°C</td> </tr> </tbody> </table>					NO	Position	1	2	3	1	CASE	80.3°C	100.3°C	99.1°C
NO	Position	1	2	3										
1	CASE	80.3°C	100.3°C	99.1°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	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