



Test Report : RDDW10H-05

10W DIP 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
Other

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-1% ~ +1% (Max)	I/P:110VDC O/P:FULL LOAD Ta:25°C	V1 : +0.05% V2 : +0.36%	P
2	RIPPLE & NOISE	50 mVp-p (Max)	I/P:110VDC O/P:FULL LOAD Ta:25°C	V1 : 10 mV V2 : 12 mV	P
3	LINE REGULATION	-0.2% ~ +0.2% (Max)	I/P:43VDC~160VDC O/P:FULL LOAD Ta:25°C	V1 : -0.01% ~ +0.05% V2 : -0.02% ~ +0.06%	P
4	LOAD REGULATION	-1% ~ +1% (Max)	I/P:110VDC O/P:0% LOAD-FULL LOAD Ta:25°C	V1 : -0.11% ~ +0.10% V2 : -0.08% ~ +0.14%	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	43 VDC ~160 VDC	I/P:TESTING O/P:FULL LOAD Ta:25°C	38.1 ~160.0 VDC	P
2	EFFICIENCY	85% (Typ)	I/P:110VDC O/P:FULL LOAD Ta:25°C	85.8%	P
3	DC CURRENT	107 mA / FULL LOAD (Max) 6 mA / NO LOAD (Max)	I/P:110VDC O/P:NO / FULL LOAD Ta:25°C	106.27 mA / FULL LOAD 1.77 mA / NO LOAD	P
4	UNDER VOLTAGE LOCKOUT	POWER UP 40VDC (Typ) POWER DOWN 38VDC (Typ)	I/P:TESTING O/P:FULL LOAD Ta:25°C	POWER UP 39.6VDC POWER DOWN 37.5VDC	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	SHORT PROTECTION	CONTINUOUS	I/P:160VDC O/P:FULL LOAD Ta:25°C	HICCUP MODE AUTO-RECOVER	P
2	OVER LOAD PROTECTION	120% ~ 180%	I/P:110VDC O/P:TESTING Ta:25°C	128.2% HICCUP MODE AUTO-RECOVER	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	REMOTE CONTROL	Power on : R.C - Vin >3.5Vdc~ 160Vdc or Open Power off : R.C - Vin <1.2Vdc or Short	I/P:110VDC O/P:FULL LOAD Ta:25°C	Power on : R.C>2.62Vdc or Open Power off : R.C<2.25Vdc or Short	P

SAFETY TEST

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:3.0K VDC/min	I/P-O/P:3.0K 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 : 8HRS I/P:110VDC O/P:FULL LOAD Ta=25°C 2. HIGH AMBIENT BURN-IN : 8HRS I/P:110VDC O/P:FULL LOAD Ta=60°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>59.6°C</td> <td>95.6°C</td> </tr> </tbody> </table>				NO	Position	1	2	1	CASE	59.6°C	95.6°C
NO	Position	1	2										
1	CASE	59.6°C	95.6°C										
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOURS	I/P:110VDC 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 : 0.879 M.T.B.F : 1137316HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN HSIAO	VINCENT ZENG