



Test Report : GEM12I12

AC-DC High Reliability Interchangeable Medical Adaptor

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

■ SAFETY TEST

Safety Test

■ RELIABILITY TEST

Environment Test

Other test

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	80mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	20mVp-p	P
2	VOLTAGE TOLERANCE	-3% ~ +3% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-1.43% ~ +1.44%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0.01% ~ +0.05%	P
4	LOAD REGULATION	-3% ~ +3% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-1.43% ~ +1.44%	P
5	SET UP TIME	500 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	903.401mS	P
6	RISE TIME	30 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	9.354mS	P
7	HOLD UP TIME	16 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	17.885mS	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE	80VAC ~ 264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	47.7V ~ 264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	82.5%	I/P:230VAC O/P:FULL LOAD Ta:25°C	83.02%	P
4	AVERAGE EFFICIENCY	82.96%(DoE LEVEL VI) 83.26%(CoC Version 5)	I/P:115/230VAC O/P:25%、50%、75%、100% LOAD Ta:25°C	84.83%(115VAC) 83.28% (230VAC)	P
5	AC CURRENT	0.4A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	0.256A	P
6	NO LOAD POWER CONSUMPTION	< 0.075W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.0457W	P

7	INRUSH CURRENT	< 60A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	59A	P
8	LEAKAGE CURRENT	<100μA	I/P:264VAC O/P:Min LOAD Ta:25°C	L-FG: 20μA N-FG: 20μA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110% ~ 200%	I/P:230VAC O/P:TESTING Ta:25°C	148.0% HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	117% Clamp by ZENER diode MMSZ5244BF (14V)	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE HICCUP MODE RESET AUTO RECOVER	P

■ SAFETY TEST

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:5656 VDC/min	I/P-O/P:5656 VDC/min Ta:25°C	I/P-O/P: 0.02μA 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 : 4HRS I/P:230VAC O/P:100% LOAD Ta=25°C 2. HI AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:100% LOAD Ta=40°C 3. HI AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:50% LOAD Ta=70°C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOURS	I/P : 230VAC O/P : 100% LOAD Ta= -20°C	TEST : OK	P

OTHER

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C11 IS THE MOST CRITICAL COMPONENT I/P:230 VAC O/P:100% LOAD Ta=25°C LIFE TIME=146764HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME= 52979HRS I/P:230 VAC O/P:50% LOAD Ta=70°C LIFE TIME= 50120HRS (12hours/day)			P
2	MTBF	MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 1.510475 M.T.B.F : 662043 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN	VINCENT ZENG