



Test Report : GEM60I05

60W AC-DC Reliable Green 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	100 mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	67 mVp-p	P
2	VOLTAGE TOLERANCE	-5% ~ +5% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-0.78% ~ +5.0	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0.1% ~ +0%	P
4	LOAD REGULATION	-5% ~ +5% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-2.21% ~ +3.31%	P
5	SET UP TIME	1000ms	I/P:230VAC O/P:FULL LOAD Ta:25°C	425.8ms	P
6	RISE TIME	100ms	I/P:230VAC O/P:FULL LOAD Ta:25°C	0.8ms	P
7	HOLD UP TIME	10 ms (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	80.3ms	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE	90VAC ~ 264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	43.2V ~ 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	80%	I/P:230VAC O/P:FULL LOAD Ta:25°C	81.26%	P
4	AVERAGE EFFICIENCY	81.61% (DoE Level V) 81.61% (CoC Version 4)	I/P:115/230VAC O/P:25% 、 50% 、 75% 、 100% LOAD Ta:25°C	85.01% (115VAC) 83.72% (230VAC)	P
5	AC CURRENT	1.5 A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	0.587A	P
6	NO LOAD POWER CONSUMPTION	< 0.075W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.0648W	P

7	INRUSH CURRENT	< 100A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	70.0A	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	105%~160%	I/P:230VAC O/P:TESTING Ta:25°C	135.8% HICCUP MODE RESET AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110~140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	117.6% (MMSZ5232BF) Clamp by ZENER diode	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: 0.03uA 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= -30°C	TEST : OK	P

OTHER

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C4 IS THE MOST CRITICAL COMPONENT I/P:230 VAC O/P:100% LOAD Ta=25°C LIFE TIME= 153472.3HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME= 30271.22HRS			P
2	MTBF	MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 2.042375 M.T.B.F : 489626.05 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	Archen Hsiao	Peter Cheng