



# Test Report : SGA60x48

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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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	120 mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	50mVp-p	P
2	VOLTAGE TOLERANCE	-2% ~ +2% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-0.40% ~ +0.57%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0.11% ~ +0.13%	P
4	LOAD REGULATION	-2% ~ +2% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-0.28% ~ +0.57%	P
5	SET UP TIME	500 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	158.4 mS	P
6	RISE TIME	50 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	47.66 mS	P
7	HOLD UP TIME	12 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	21.5 mS	P

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE	90VAC ~ 264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	58V ~ 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	91% (Typ)	I/P:230VAC O/P:FULL LOAD Ta:25°C	91.77%	P
4	AVERAGE EFFICIENCY	88%@115VAC 89%@230VAC	I/P:115/230VAC O/P:25%、50%、75%、100% LOAD Ta:25°C	91.82% (115VAC) 91.49% (230VAC)	P
5	AC CURRENT	1.5A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	0.995A	P
6	NO LOAD POWER CONSUMPTION	< 0.15W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.0833 W	P

7	INRUSH CURRENT	< 80A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	76.4 A	P
8	LEAKAGE CURRENT	< 0.25mA	I/P:240VAC O/P:Min LOAD Ta:25°C	L-FG: 0.02mA N-FG: 0.02mA	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110% ~ 200%	I/P:230VAC O/P:TESTING Ta:25°C	132% HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	105% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	107% (MMSZ5262B) 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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:4242 VDC/min	I/P-O/P:4242 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	SPECIFICATION	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	<table><tr><th>NO</th><th>Position</th><th>1</th><th>2</th></tr><tr><td>1</td><td>BD1</td><td>62.4°C</td><td>76.6°C</td></tr><tr><td>2</td><td>I/P C4</td><td>66.8°C</td><td>80.8°C</td></tr><tr><td>3</td><td>I/P Q2</td><td>71.4°C</td><td>85.9°C</td></tr><tr><td>4</td><td>O/P D1</td><td>84.5°C</td><td>98.6°C</td></tr><tr><td>5</td><td>O/P C8</td><td>61.5°C</td><td>76.2°C</td></tr><tr><td>6</td><td>T1</td><td>77.7°C</td><td>92.1°C</td></tr><tr><td>7</td><td>CASE</td><td>50.6°C</td><td>64.8°C</td></tr></table>	NO	Position	1	2	1	BD1	62.4°C	76.6°C	2	I/P C4	66.8°C	80.8°C	3	I/P Q2	71.4°C	85.9°C	4	O/P D1	84.5°C	98.6°C	5	O/P C8	61.5°C	76.2°C	6	T1	77.7°C	92.1°C	7	CASE	50.6°C	64.8°C		P
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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	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C8 IS THE MOST CRITICAL COMPONENT I/P:230 VAC O/P:100% LOAD Ta=25°C LIFE TIME= 142750HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME= 51530HRS			P
2	MTBF	MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 2.134442 M.T.B.F : 468506 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	PETER CHENG	VINCENT TSENG