



# Test Report : SGA60x12

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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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	80mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	46mVp-p	P
2	VOLTAGE TOLERANCE	-3% ~ +3% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-1.95% ~ +1.77%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0.02% ~ +0.06%	P
4	LOAD REGULATION	-3% ~ +3% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-1.90% ~ +1.76%	P
5	SET UP TIME	500 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	116.1 mS	P
6	RISE TIME	50 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	7.27 mS	P
7	HOLD UP TIME	12 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	18.7 mS	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	56V ~ 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	88% (Typ)	I/P:230VAC O/P:FULL LOAD Ta:25°C	88.75 %	P
4	AVERAGE EFFICIENCY	88%@115VAC 89%@230VAC	I/P:115/230VAC O/P:25%、50%、75%、100% LOAD Ta:25°C	89.588 % (115VAC) 89.523 % (230VAC)	P
5	AC CURRENT	1.5A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	1.04 A	P
6	NO LOAD POWER CONSUMPTION	< 0.15W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.0456 W	P

7	INRUSH CURRENT	< 80A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	77.1 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	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110% ~ 200%	I/P:230VAC O/P:TESTING Ta:25°C	144% HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	125% (MMSZ5245B) 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: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 border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BD1</td> <td>70.7°C</td> <td>86.1°C</td> </tr> <tr> <td>2</td> <td>I/P C4</td> <td>77.8°C</td> <td>93.5°C</td> </tr> <tr> <td>3</td> <td>I/P Q2</td> <td>85.5°C</td> <td>101.2°C</td> </tr> <tr> <td>4</td> <td>O/P D1</td> <td>100.8°C</td> <td>118.7°C</td> </tr> <tr> <td>5</td> <td>O/P C8</td> <td>74.5°C</td> <td>90.1°C</td> </tr> <tr> <td>6</td> <td>T1</td> <td>87.8°C</td> <td>102.0°C</td> </tr> <tr> <td>7</td> <td>CASE</td> <td>57.4°C</td> <td>73.3°C</td> </tr> </tbody> </table>	NO	Position	1	2	1	BD1	70.7°C	86.1°C	2	I/P C4	77.8°C	93.5°C	3	I/P Q2	85.5°C	101.2°C	4	O/P D1	100.8°C	118.7°C	5	O/P C8	74.5°C	90.1°C	6	T1	87.8°C	102.0°C	7	CASE	57.4°C	73.3°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= 49692HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME= 16853HRS			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