Test Report : GSM12x05

12W AC-DC Reliable Green 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	60mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25℃	15mVp-p	P
2	VOLTAGE TOLERANCE	-5% ~ +5% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25℃	-1.62% ~ +1.64%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25℃	-0.01% ~ +0.01%	P
4	LOAD REGULATION	-5% ~ +5% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25℃	-1.62% ~ +1.64%	P
5	SET UP TIME	500 mS	I/P:230VAC O/P:FULL LOAD Ta:25℃	888.05mS	P
6	RISE TIME	30 mS	I/P:230VAC O/P:FULL LOAD Ta:25℃	4.733mS	P
7	HOLD UP TIME	16 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25℃	16.2mS	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℃	49.7V ~ 264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK	P
3	EFFICIENCY	80%	I/P:230VAC O/P:FULL LOAD Ta:25℃	81.01%	P
4	AVERAGE EFFICIENCY	79.94%(DoE LEVEL Ⅵ) 80.30%(CoC Version 5)	I/P:115/230VAC O/P:25%、50%、75%、100% LOAD Ta:25℃	83.09%(115VAC) 81.27% (230VAC)	P
5	AC CURRENT	0.4A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25℃	0.269A	P
6	NO LOAD POWER CONSUMPTION	< 0.075W (Max)	I/P:230VAC O/P: NO LOAD Ta:25℃	0.0408W	P

7	INRUSH CURRENT	< 60A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25℃	49.25A	P
8	LEAKAGE CURRENT	<100μA	I/P:264VAC O/P:Min LOAD Ta:25℃	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℃	126.6% HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25℃	124% Clamp by ZENER diode MMSZ5234BF (6.2V)	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD Ta:25℃	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℃	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℃	I/P-O/P>100MΩ NO DAMAGE	P

■ RELIABILITY TEST

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">1. ROOM AMBIENT BURN-IN：4HRS
I/P:230VAC O/P:100% LOAD Ta=25℃
2. HI AMBIENT BURN-IN：4HRS
I/P:230VAC O/P:100% LOAD Ta=40℃
3. HI AMBIENT BURN-IN：4HRS
I/P:230VAC O/P:50% LOAD Ta=70℃

<table><tr><th>NO</th><th>Position</th><th>1</th><th>2</th><th>3</th></tr><tr><td>1</td><td>BD1</td><td>48.2℃</td><td>63.1℃</td><td>81.9℃</td></tr><tr><td>2</td><td>Q1</td><td>79.6℃</td><td>93.6℃</td><td>99.8℃</td></tr><tr><td>3</td><td>I/P C2</td><td>57.8℃</td><td>72.2℃</td><td>86.7℃</td></tr><tr><td>4</td><td>O/P D5</td><td>81.2℃</td><td>95.7℃</td><td>97.4℃</td></tr><tr><td>5</td><td>T1</td><td>70.2℃</td><td>84.8℃</td><td>92.5℃</td></tr><tr><td>6</td><td>O/P C11</td><td>67.7℃</td><td>82.3℃</td><td>90.9℃</td></tr><tr><td>7</td><td>CASE</td><td>59.4℃</td><td>73.5℃</td><td>86.1℃</td></tr></table></td><td>P</td></tr>
<tr><td>2</td><td>LOW TEMPERATURE TURN ON TEST</td><td>TURN ON AFTER 2 HOURS</td><td>I/P : 230VAC
O/P : 100% LOAD
Ta= -20℃</td><td>TEST：OK</td><td>P</td></tr>
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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℃ LIFE TIME= 92883HRS I/P:230 VAC O/P:100% LOAD Ta=40℃ LIFE TIME= 33762HRS I/P:230 VAC O/P:50% LOAD Ta=70℃ LIFE TIME= 37202HRS (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