

客 户(CUSTOMER): \_\_\_\_\_

# 产 品 承 认 规 格 书

## SPECIFICATION FOR APPROVAL

产品名称 (PART NAME): SWITCHING POWER SUPPLY产品型号 (MODEL NO.): SMT-012-060VP产品规格 (PART SPEC) : 12VDC 5amp日 期 (DATE): 2013-10-29版本号 (REVISION): V1.0客户承认印 (签)**Customer`s Approval****Stamp:**

承认日期:

(敬请承认后回返一份 Please return one copies after approval)

生产商/Manufacturer:(签)

制 作	确 认	审 核	批 准
MADE BY	DESIGNED BY	CHECKED BY	APPROVED BY

**Quanzhou Smarts Electronic & Technology Co.,Ltd**

7th Floor Hengxin building No.9 Chifeng Rd. Licheng dist.,Quanzhou,Fujian,China

Tel.:+86 (595) 2725 6889 Fax:+86 (595) 2246 5526

E-mail:[steven@smartselectronic.com.cn](mailto:steven@smartselectronic.com.cn)



## **CONTENTS of APPROVAL SHEET**

1. INTRODUCTION
2. INPUT REQUIREMENTS
3. OUTPUT REQUIREMENTS
4. EFFICIENCY
5. DIELECTRIC STRENGTH (Hi-Pot) TEST
6. INSULATION RESISTANCE
7. PROTECTION
8. ENVIRONMENTAL CONDITIONS
9. COOLING
10. BURN-IN
11. REFERENCED STANDARD
- 12.MOUNTING CONNECTORS
- 13.MECHANICAL FEATURES
- 14.DIAGRAM DATA
- 15.TEST RESULT

## 1. INTRODUCTION:

This document define a switching power supply electronic process.The switching power supply will provide for technology equipment including electrical business equipment.

## 2. INPUT REQUIREMENTS:

- 2.1 Operating range: 90-264VAC
- 2.2 Rated Input Voltage :100-240VAC
- 2.3 Input Frequency Range: 50/60Hz +/-3Hz
- 2.4 Input In-rush Current: 100A max
- 2.5 Input Current:1.5A max

## 3.OUTPUT REQUIREMENTS:

### 3.1 Output Voltage and Current

Output	Output Regulation(V)		No Load	Rating Load (A)
	Minimum	Maximum	Current(A)	Continuous Current(A)
12V	11.4V	12.6V	0A	5.0A

### 3.2 Output Voltage Regulation

The total output voltage regulation shall be +/-5%,including the effects of line voltage variations,load current,ripple and noise,and the AC component of the load current.

### 3.3 Output Voltage Ripple

The switching power supply shall not exceed the following limits in the indicated voltage for 60Hz or 50Hz ripple,switching frequency ripple and noise measured with 20MHz width.

Ripple and Noise:50/60Hz Ripple + Switching Ripple and Noise

Output	Ripple
0-5.0A	200mV

Ripple and Noise are measured at the end of output cables which are added a 0.1uF(104) Ceramic capacitor and a 22uF Electrolytic capacitor.

**4. EFFICIENCY:**

When 120VAC line input voltage (100-240 VAC),the efficiency shall be >87% at rating load.

**5. DIELECTRIC STRENGTH (Hi-Pot) TEST:**

Finished product withstands with AC3000Vrms/50Hz,5mA max,  
primary to secondary, 1 minute for type test,1 second for production test.

**6. INSULATION RESISTANCE:**

Primary to secondary: 10M $\Omega$  min at 500VDC.

**7. PROTECTION:****7.1 Short Circuit Protection**

If short circuit occurs,all the output should be protected. After the fault, the adapter automatically recovers.

**7.2 Over Shoot**

The Output over shoot at turn-on shall not exceed 10% of normal voltage value with or without the load connected.

**7.3 Start-up time**

The start-up time is less than 2 second.

**8.ENVIRONMENTAL CONDITIONS:****8.1 Temperature**

Operating temperature: 0 $^{\circ}$ C to +40 $^{\circ}$ C

Storage temperature : -20 $^{\circ}$ C to +60 $^{\circ}$ C

**8.2 Humidity**

Relative humidity:  $\leq$ 95%

**8.3 Operating Ambient Altitude**

Altitude:0-3000m

**8.4 Operating at the lower temperature**

At -0 $^{\circ}$ C,with the rated voltage 100-240Vac charged to the primary and unloaded and full load on the secondary 8 hours, no abnormality in electric and mechanical characteristic, after 2 hours recovery at the room

temperature.

### **8.5 Operating at the high temperature**

At +40°C, with the rated voltage 100-240Vac charged to the primary and unloaded and full Load on the secondary 8 hours, no abnormality in electric and mechanical characteristic, after 2 hours recovery at the room temperature.

## **9. COOLING:**

Cooling shall be with natural convection cooling.

## **10. Burn-in**

The burn-in test will be performed at least 4 hours at centigrade degrees under full load Condition.

## **11. Referenced standard:**

### **11.1 EMI Standards**

Reference EN50082-1, EN55022-B, GB-17625.1-2003, GB-9254-1998  
EN55013 EN55020

### **11.2 Safety Standards**

The adapter shall be meet certified with the following safety standards.  
UL61347, EN61347, GB4943-2001, J55013, J55020, J60065

## **12. MOUNTING CONNECTORS:**

### **12.1 AC Input Connector**

Spec : 2Pin (UL PIN)

### **12.2 DC Output Cable**

Wire : (Optional) SPT-1 18AWG\*2C L=1200mm Color: Black (音插帶磁环)

Plug : (Optional) 5.5 x 2.1 x 10mm

## **13. MECHANICAL FEATURES:**

### **13.1 Dimension(Size)**

Length: 119.5mm

Width: 62.5mm

Height: 33.5mm

**13.2 Weight**

The Power Supply unit :  $240\pm 10g$

**13.3 Vibration and shock**

No Evidence of any mechanical or functional damage after the vibration and shock testing.

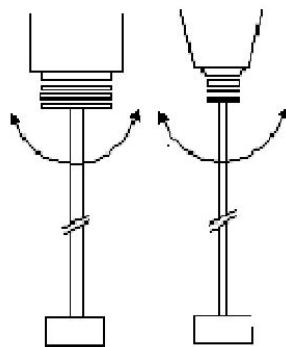
Test conditions		Acceptance Criteria
Frequency	10-55Hz	Nominal functional test should be satisfied after the test
Sweep	For each axis(X,Y,Z)	
Displacement	0.15mm	
Periodicity	10	

**13.4 Drop test**

After Dropping from a height of 75 cm onto a wooden floor , Dropping at 6 sides totally, NO breakage should be happened in the test piece.

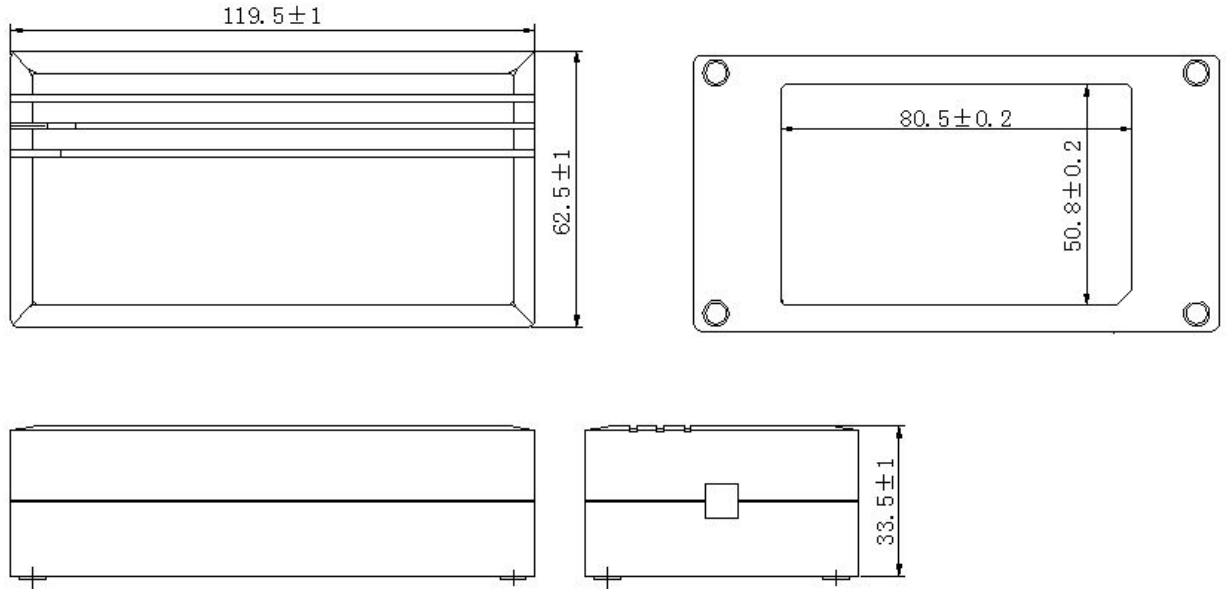
**13.5 Bending Test**

Fix the power supply and its plug, apply a load of 200g to the other end, turn the cable by  $\pm 60^\circ$  carry out this process 1000 times, at the rate of 20 times per minutes. No abnormality in mechanical and electrical Characteristic and disconnection within 30% after the test.



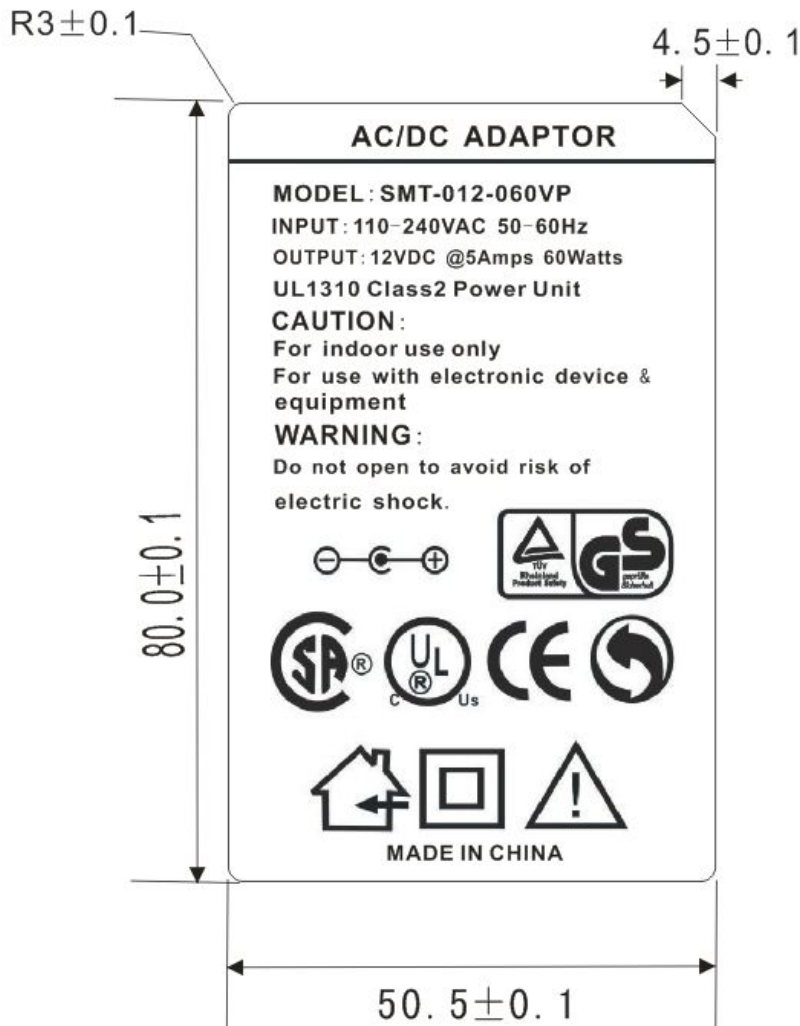
**14 . DIAGRAM DATA:**( See to attach the diagram)

**14.1. APPEARANCE DRAWING:(Unit:mm)**



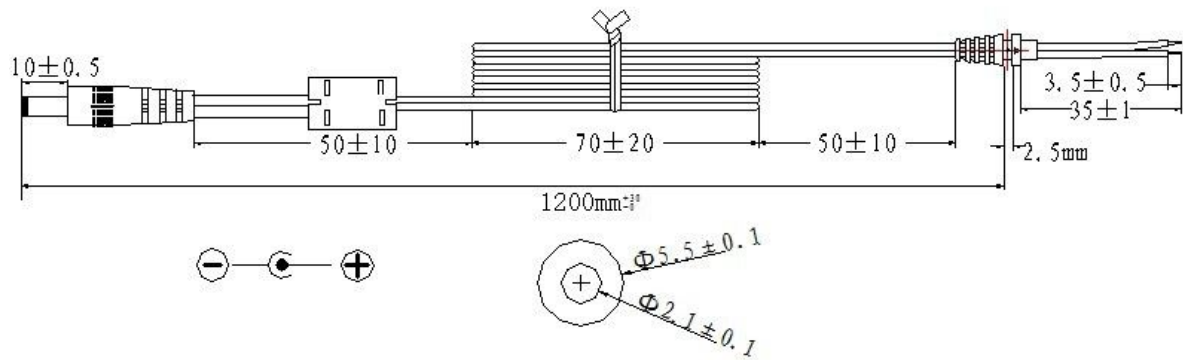
**14.2. NAME PLATE: (Unit:mm)**

NOTE: MATERIAL:POLYESTER COATING:0.10+/-0.03mm





**14.3. DIMENSION OF OUTPUT PLUG & DC CORD:(Unit:mm)**



Remarks:

- 1) SPT-1 18AWG\*2C L=1200mm Color: Black (音插带磁环)
- 2) PLUG:5.5 x 2.1 x 10mm

**15.TEST RESULT:****15.1 Parameter (room temperature) Test**

Reference Document(参考文档)		Test Operate Direct(测试操作指引)			
Test Conditions 测试条件	Test Location(测试地点)		Laboratory		
	Stabilization(稳定时间)		1Hour/s		
	Temperature(温度)		25 °C		
Test Equipment 测试仪器	Equipment 仪器	Manufact- urer(厂 商)	Type 类型	Number 编号	Checkout Date(校验 日期)
	AC POWER SOURCE 电源	Parwa	5000	lvp-yf-01	2012.12
	ELECTRONIC MAINFRAM 电子负载	Prodigit	3302C	lvp-yf-02	2012.12
	OSCILLOGRAP H 示 波器	Tektronix	TDS 1001B	lvp-yf-05	2012.12
	Multimeter 万用表	Lwdqgs	MY-60	lvp-yf-10	2012.12
	可程式恒温恒湿 试验机	MLH	GDJS-100	lvp-yf-6	2012.12
	电磁兼容测试仪	FORWAR D	EMC300A	lvp-yf-8	2012.12
Test Sample 测试样机	Sample Num. 样机编号	1#、2#			
	Date Code 生产日期				
Test Results 测试结果	PASS				

测 试	确 认	批 准
TESTED BY	DESIGNED BY	APPROVED BY

**15.2 Test Data 测试数据**

	Test Item 测试项目	Test Condition 测试条件	Rating Min. 额定范围	Room Temperture 常温				
				1#	2#	3#	4#	5#
INPUT PARAM CTI C(输入参数)	Full Load Power 满载功率	Vin.100	<78W					
		Vin.240						
	Inrush Current 冲击电流	Vin.100	<100A					
	Input Current 输入电流	Vin.100	<2.0A					
OUTPUT PARAM ETI C(输出参数)	Output Voltage @Input Voltage 100V	0A	11.4-12.6V					
		5.0A	11.4-12.6V					
	Output Voltage @Input Voltage 240V	0A	11.4-12.6V					
		5.0A	11.4-12.6V					
	Ripple 纹波	0A	<200mV					
		5.0A	<200mV					
	Insulation R.(绝缘电阻)	500Vdc	>10M					
	Hi-Pot(高压)	3000Vac	≤5mA					
测试		确认			批准			
TESTED BY		DESIGNED BY			APPROVED BY			