

**1.Scope: 描述**

The document detail the electrical, mechanical and environmental specifications of a SMPS,the power supply provide **48W** continuous output power.

资料详细描述了一款 **48W** (连续输出功率)开关电源的电气性,结构性及环境等要求.

The power supply shall meet the RoHS requirement.

此款电源符合RoHS 要求.

**2.Input Characteristics: 输入特性****2.1. Input Voltage & Frequency: 输入电压与频率**

	Minimum/最小	Nominal/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

**2.2. Input AC Current: AC 输入电流**

**1.20A** @ 100-240Vac input & Full load: 额定输入及满载

**2.3. Inrush Current (cold start): 浪涌电流(冷启动)**

**50A Max** @ 264Vac input: 在AC 264V输入

**2.4. Average Efficiency: 平均效率**

**88.00%** min. @ Nominal input: 额定输入

**2.5. Energy Consumption: 空载功耗**

**≤0.21W** @ Nominal input and no load condition : 额定输入及空载状态。

**3. Output Characteristics: 输出特性****3.1. Static Output Characteristics <Vo & R+N>/静态输出特性**

Output Rate	Rated Load/额定负载		Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load			
<b>12.00V</b>	<b>0.10A</b>	<b>4.00A</b>	<b>11.40V ~ 12.60V</b>	<b>120mV</b>	

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (test under the condition of rated input and rated output)

纹波与噪声: 量测时示波器选用20MHz 带宽限制,输出端要并联一颗0.1uF 的陶瓷电容和一颗10uF 的电解电容. (在额定输入 及输出的条件下检测)

**3.2. Line/ Load Regulation: 线性/负载调整率**

Output Rate	Rated Load: 额定负载		Line Regulation 线性调整率	Load Regulation 负载调整率	Remark 备注
	Min. Load	Max. Load			
<b>12.00V</b>	<b>0.10A</b>	<b>4.00A</b>	<b>± 2%</b>	<b>± 5%</b>	

## 3.3. Turn - on Delay Time: 开机延迟时间

**3S Max** @ 100 Vac to 240Vac input & Full load

## 3.4. Hold-up Time/关机维持时间

10mS min. @ Full load & 115Vac/60Hz input turn off at worst case/在最差情况关机

**4. Protection Requirements: 保护要求**

## 4.1. Over Current Protection: 过流保护

Over Current Point Limited: 过流点限制: **8.0A Max** (100-240Vac)

The output shall hiccup when the over currents applied to the output rail, and shall be self-recovery when the fault condition is removed

当过电流时,输出将进入打嗝模式,当过流情况解除后,产品将会自动恢复正常

## 4.2. Short Circuit Protection: 短路保护

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed

当输出短路时,产品输入功率降低且不会损伤,当短路情况解除后,产品将会自动恢复正常

**5. Environment Requirements: 环境要求**

## 5.1. Operating Temperature and Relative Humidity: 操作温度 湿度要求

Operating Temperature: 工作温度 0°C to +40°C

Operating Relative Humidity: 工作湿度要求 0%RH to 90%RH

## 5.2. Storage Temperature and Relative Humidity: 存储温度湿度要求

Storage Temperature: 存储温度 -20°C to +80°C

Storage Relative Humidity: 存储湿度 5%RH to 95%RH non-condensing

## 5.3. Vibration: 振动

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动1 小时

## 5.4. Drop in: 跌落

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, and the hardwood should be put on the base of the cement or on the ground without flexibility. Apply two times on all surface.

跌落高度:1 米, 并跌落到厚度为20mm 的硬木上,且硬木应放在水泥基座或等同的无弹性地面上,每面各1 次

**6. Reliability Requirements/可靠性要求**

## 6.1. Burn-in: 煲机

The power supply shall be burn-in for 2-4 Hours under normal input and Min 80% rated load at 40°C ± 5°C

产品至少要在40°C ± 5°C 的环境及最小80%额定负载条件下煲机2-4 小时

## 6.2. MTBF: 产品平均无故障时间

Use it at 25°C environmental temperature, typical input voltage and full load. 50000 Hours

在25度环境温度下, 标准输入电压及满负载状态下使用 50000小时

## 6.3. LIFE: 产品使用寿命

Use it at 25°C environmental temperature, typical input voltage and typical load. Above 2 Years

在25度环境温度下, 标准输入电压及标准负载状态下使用 2年以上

Use it at 40°C environmental temperature, typical input voltage and typical load.

Above 1 Years

在40度环境温度下, 标准输入电压及标准负载状态下使用

1年以上

## 7. Safety And EMC Requirement: 安全及EMC要求

### 7.1. Dielectric Strength(Hi-pot): 介电耐压强度(高压)

Primary to Secondary: 3000Vac / 10mAMax / 60 second (1-3second for production)

初级对次级: 3000Vac / 10mAMax / 60 秒(生产时高压测试时间: 1-3 秒)

### 7.2. Insulation Resistance: 绝缘阻抗

100MΩ min. at primary to secondary add 500Vdc test voltage

100MΩ最小, 在初级与次级间加500Vdc 进行测试

### 7.3. Regulatory Standards: 安规标准

Type 安规	Country district 国家或地区	Standard 标准	State 状况	Mark 备注
UL	USA	UL60950-1	valid 有效	
GS	Europe	EN60950-1:2011	N/A	
CCC	China	GB4943-2011	N/A	
PSE	Japan	电安法第一项	N/A	
SAA	Australia	AS/NZS60950.1:2011	N/A	
KC	Korea	K60950-1	N/A	

### 7.4. EMC Requirement: EMC要求

Type EMC	Country district 国家或地区	Standard 标准	State 状况	Mark 备注
FCC	USA	FCC Part15	valid 有效	
CE	Europe	EN55022:2010 EN 55024:2010	N/A	
CCC EMC	China	GB4943-2011	N/A	
VCCI	Japan		N/A	
C-TICK	Australia	AS/NZS CISPR22: 2009	N/A	

### 7.5. Surge Capability Requirement: 浪涌抗扰度要求

Test condition: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current; impedance

2Ω; Phase Angle: 0~270.

测试条件: 开路电压波: 1.2/50 μs; 短路电流波: 8/20 μs; 发生器内阻: 2Ω; 相位: 0-270度

LINE 线	Phase Angle 相位	Test Voltage 测试电压	Result 结果	Mark 备注
L-N	0° 90° 180° 270°	+/- 1KV	A	
L-PE	0° 90° 180° 270°	N/A	N/A	
N-PE	0° 90° 180° 270°	N/A	N/A	

**8.Mechanical Drawing: 结构示意图**

DIMENSION Dimension: 尺寸

97(L)X45(W)X38.1(H)mm

WEIGHT Weight: 重量

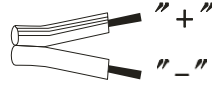
ABOUT 150g

AC INPUT TYPE: 交流电源输入型式

美规插墙式

Output DC Cord: 输出直流电源线

剥皮镀锡5mm



DC OUTPUT CABLE: 直流输出线

USE SPT-1 18AWG WIRE

LABEL MATERIAL: 标签材质

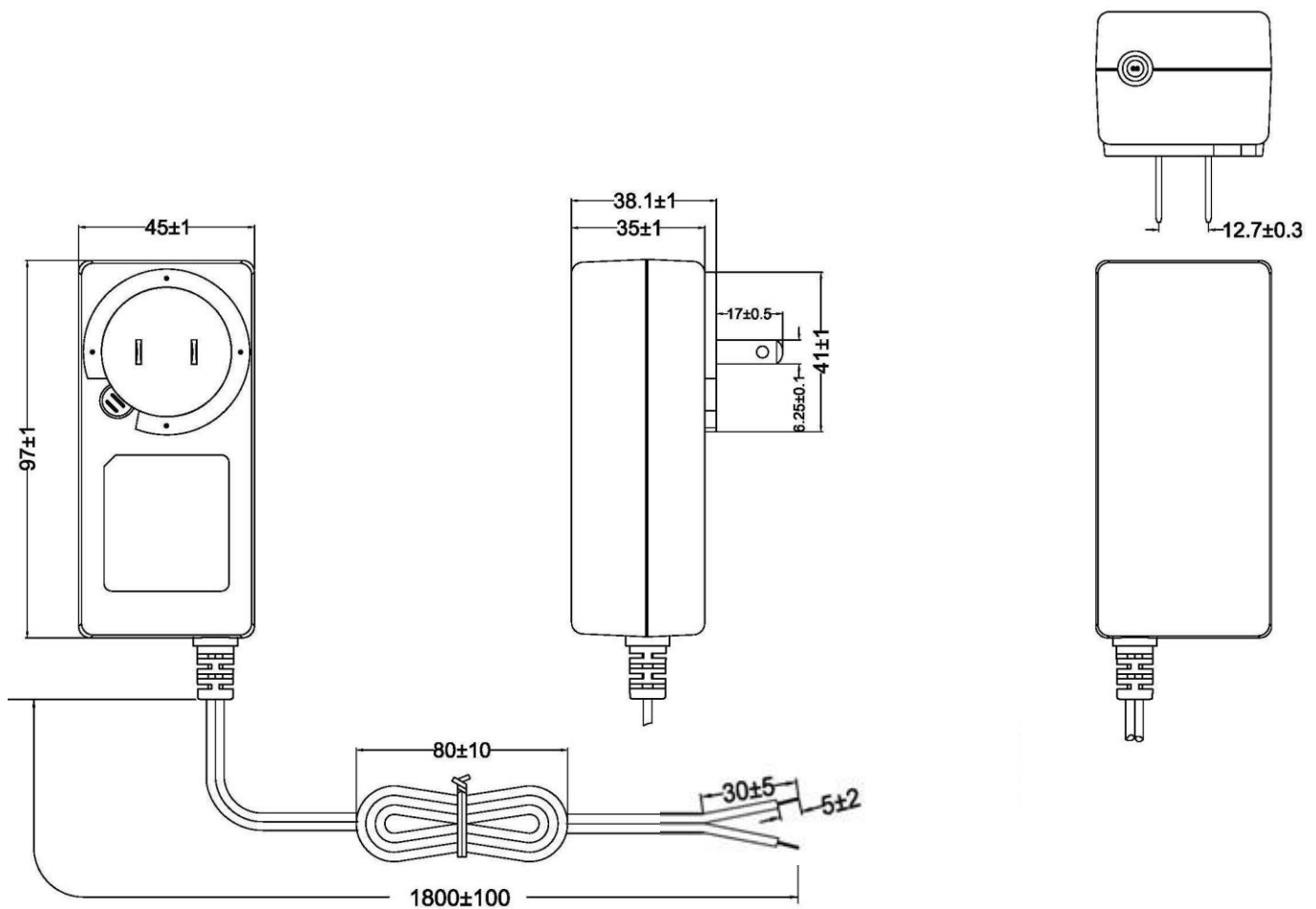
PET+MYLAR

CASE MATERIAL: 外壳材质

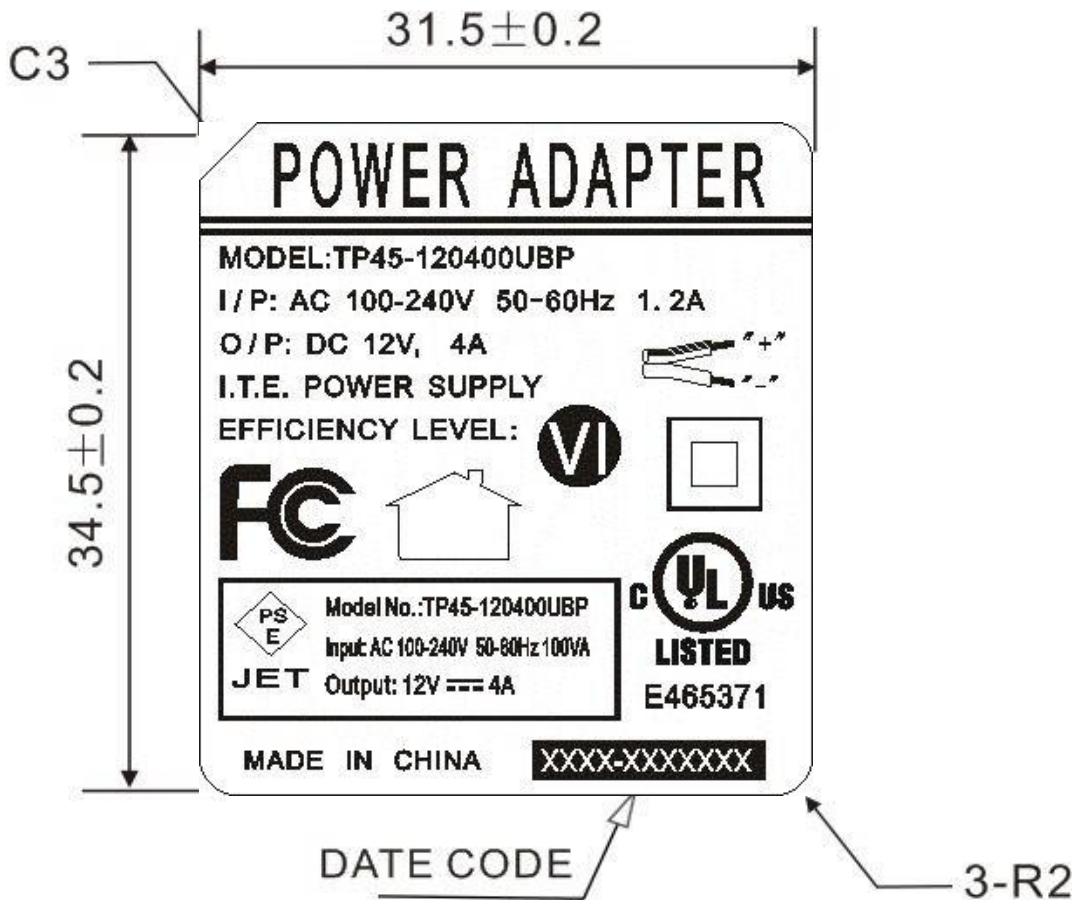
PC+ABS

PCB MATERIAL: 线路板材质

94V-0



9.I/O Marking Drawing: 铭牌示意图



NOTE:

1. SILVER WORD ON BLACK BASE.
2. MATERIAL: PET+MYLAR FILM.

