

# 承认书



## SPECIFICATION FOR APPROVAL

### Switching power Supply/开关电源

客 户:

CUSTOMER: SparkFun

产品描述:

DESCRIPTION: Input: ☒ 100~240V / ☐ 200~240VAC 50/60Hz Output: 5VDC2A

机种型号:

OUR MODEL NO: YNQX12G050200UU

样品编号:

日期:

SAMPLE NO: QX202000648DATE: 2020-06-19

产品颜色:

SAMPLE COLOR: Black ☒White ☐符合环保项: ROHS2.0 ☒ REACH ☒ PAHS ☐ 17P ☐ 加州 65 ☒

APPROVAL SIGNATURE/客户确认

核准/APPROVED BY

审核/CHECKED BY

检测/TESTED BY

Manufacturer/制造商

业务/SALES

核准/APPROVED BY

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**QSHAIN** 深圳市齐鑫电子有限公司  
SHEN ZHEN QI XIN ELECTRONICS CO., LTD

型号/Our model: YNQX12G050200UU

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版本目录/Rev. List

| 版本/Rev. | 日期/Date    | 描述/Description | 制订/Design |
|---------|------------|----------------|-----------|
| A0      | 2020-06-19 | 新版本/New Rev.   | CAL       |
|         |            |                |           |
|         |            |                |           |
|         |            |                |           |
|         |            |                |           |

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|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|

**1、描述/ DESCRIPTION:**

**1.1 产品结构/Product Structure:**

☒ 插墙式\SMPS Adaptor(Wall mount)、☐ 桌面式\SMPS Adaptor(Desk-top)、☐ 裸板\Open Frame

**1.2 输出方式\Output Mode:**

☒ 恒压\Constant Voltage、☐ 恒流恒压\Constant Voltage & Constant Current

**1.3 本规格书适应于 YNQX12G050200UU 型号的开关电源.**

The purpose of the document is to specify the functional requirements of a 10W switching power supply.

**2、输入特性/INPUT CHARACTERISTICS:**

**2.1 输入电压/Input Voltage:**

额定电压/Rated Voltage: ☒ 100~240 Vac / ☐ 200~240Vac.

调整范围/Variation Range: 90-264Vac.

**2.2 输入频率/Input Frequency:**

额定频率/ Rated Frequency: 50/60Hz.

调整频率/Variation Frequency: 47-63Hz.

**2.3 输入电流/Input Current:**

当输入交流电压为额定值的下限电压负载满载时,最大输入交流电流 0.3A.

0.3Amps max At any input voltage and rated, DC output rated load.

**2.4 浪涌电流/Inrush Current:**

当输出为额定负载,环境温度为 25℃,输入 240Vac 冷态起机时将不会损坏.

No damage shall be occurred and the input fuse shall not be blown up, Cold start at 240Vac input, with rated load and 25℃ ambient.

**2.5 AC 漏电流/Ac Leakage Current:**

☐ I 类: 当输入电压 240Vac 时,最大漏电流为 3.5mA

3.5mA Max.At240Vac input.

☒ II 类: 当输入电压 240Vac 时,最大漏电流为 0.25mA.

0.25mA Max.At240Vac input.

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### 3、输出特性/OUTPUT CHARACTERISTICS:

#### 3.1 输出功率/Power output (AC: 100~240V)

| 电压<br>Voltage | 最小负载<br>Min. Load | 额定负载<br>Rated. Load | 峰值功率<br>Peak | 输出功率<br>Output power |
|---------------|-------------------|---------------------|--------------|----------------------|
| 5VDC          | 0.01A             | 2A                  |              | 10W                  |

#### 3.2 负载特性,调整率/Combined Load/Line Regulation (AC: 100~240V)

| 电压<br>Voltage | 最小负载<br>Min. Load | 额定负载<br>Rated. Load | 线性调整<br>Line Regulation | 负载调整<br>Load Regulation |
|---------------|-------------------|---------------------|-------------------------|-------------------------|
| 5VDC          | 0.01A             | 2A                  | ±2%                     | 4.7-5.3V                |

#### 3.3 纹波和噪音 Ripple and Noise:

测试条件:在输入 115/230Vac 25℃和输出最小及最大负载时,使用示波器带宽为 20MHz 连接到适配器的输出端,同时输出端并联一个 47uF 的电解电容和一个 0.1uF 的瓷片电容.

At 115/230Vac 25℃ input and output Min and Max.Load,the ripple and noise are as follows when measure with Max.Bandwidth of 20MHz and Parallel 47uF/0.1uF,crossed connected at testing point.

| 电压<br>Voltage | 最大纹波/最大噪音<br>Ripple and Noise(Max.) |
|---------------|-------------------------------------|
| +5VDC         | 200mV p-p                           |

#### 3.4 启动延迟时间/Turn on delay time:

当输入 115Vac 和输出最大负载时,最大启动时间为 3S.

3Second Max.at 115Vac input and output Max.load.

#### 3.5 上升时间/Rise time:

当输入 115Vac 和输出最大负载时最大时间为 40 mS.

40 mS Max.at 115Vac input and output Max load.

#### 3.6 保持时间/Hold up time:

当输入 115Vac 和输出最大负载时,最小保持时间为 5 mS .

5 mS Min.at 115Vac input and output Max.Load.

#### 3.7 待机功耗/Standby Power:

当输入 115Vac 60Hz 时 0.1W 最大 .

0.1W Max. at 115Vac 60Hz Io=0 input.

#### 3.8 效率/Efficiency:

当 115/230Vac 输入电压时, 1/4, 1/2, 3/4 和满载计算平均效率, 最小 78.70%.

78.70% MIN,At 115/230Vac input voltage,1/4, 1/2, 3/4 and full load calculation average efficiency.

适配器满足能效 VI.

Adapter meet efficiency level VI.

|                                                                    |                               |
|--------------------------------------------------------------------|-------------------------------|
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**3.9 过冲/Overshoot:**  
 在电源开启或关闭的时候,最大 15%.  
 15% Max. When power supply at turn on or turn off.

**4、保护功能/PROTECTION FUNCTION:**

**4.1 短路电路保护/Short circuit protection:**  
 该电源供给器在短路解除时能正常工作恢复.  
 The power supply will be auto recovered when short circuit faults remove.

**4.2 过流保护/Over current Protection:**  
 过流故障排除后,电源将自动恢复正常工作.  
 The power supply will be auto recovered when over current faults remove.

**5、环境要求/ENVIRONMENTAL REQUIREMET:**

**5.1 工作温度/Operating Temperature:**  
 0℃-40℃,满载,正常工作.  
 0℃ to 40℃, Full load, Normal operation.

**5.2 储藏温度/Storage Temperature: -20℃ to 60℃**  
 带外壳/With package

**5.3 工作湿度/Relative Humidity:**  
 5%(0℃)~90%(40℃),72 小时,满载,正常工作.  
 5%(0℃)~90%(40℃)RH,72Hrs, Full load, Normal operating.

**5.4 振动/Vibration:**

**1. 测试标准:国际电工电子委员会**  
 Operating: IEC 721-3-3 3M3  
 5~9Hz, A=1.5mm  
 加速度(9~200Hz, Acceleration 5m/S<sup>2</sup>)

**2. 运输/Transportation:**  
 IEC 721-3-2 2M2  
 5-9Hz, A=3.5mm  
 9~200Hz, 加速度 Acceleration=5m/S<sup>2</sup>  
 200~500Hz, 加速度 Acceleration=15m/S<sup>2</sup>

**3. 轴向振动/Axes, 10 cycles per axis.**  
 在测试过程中不能出现永久性的损坏.  
 No permanent damage may occur during testing.  
 在电源开启和关闭后,样机能够恢复到最初条件.  
 The SAMPLE has to restore to its original situation after power off/on.

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### 5.5 跌落试验/Dropping Packed:

跌落高度为 1000mm;

Drop the height is 1000mm.

测试台面是厚 13mm 的夹木板, 离地面高 19-20mm

The horizontal surface Consists of hardwood at least 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor.

## 6、安全及 EMC 要求/SAFETY AND EMC REQUIREMENT:

### 6.1 产品类别/Classification of Installation:

☐ I 类/Class I Equipment、☒ II 类/Class II Equipment

### 6.2 应用领域/Application Fields:

☒ IT 类/Information Technology Equipment、☐ AV 类/Audio Video And Similar Electronic Apparatus、  
☐ 家电类/Household Electrical Appliances、☐ 灯具类/Lamps And Lanterns

### 6.3 Regulatory Standards/ 安规标准:

| 国家/ Country                                                         | 标准/Standard                          |                                      |                                             |                                  |                                  |                                  |
|---------------------------------------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> 中国 / China                                 | <input type="checkbox"/> GB4706      | <input type="checkbox"/> GB4943      | <input type="checkbox"/> GB19510            | <input type="checkbox"/> GB8898  |                                  |                                  |
| <input type="checkbox"/> 欧洲 / Europe                                | <input type="checkbox"/> EN61558     | <input type="checkbox"/> EN60065     | <input type="checkbox"/> EN60950            | <input type="checkbox"/> EN62368 | <input type="checkbox"/> EN60335 | <input type="checkbox"/> EN61347 |
| <input type="checkbox"/> 英国 / UK                                    | <input type="checkbox"/> BS61558     | <input type="checkbox"/> BS60065     | <input type="checkbox"/> BS60950            | <input type="checkbox"/> BS62368 | <input type="checkbox"/> BS60335 | <input type="checkbox"/> BS61347 |
| <input checked="" type="checkbox"/> 美国 / USA                        | <input type="checkbox"/> UL1310      | <input type="checkbox"/> UL60065     | <input checked="" type="checkbox"/> UL60950 | <input type="checkbox"/> UL62368 |                                  |                                  |
| <input type="checkbox"/> 澳大利亚和新西兰<br>/Australian and New<br>Zealand | <input type="checkbox"/> AS/NZS61558 | <input type="checkbox"/> AS/NZS60065 | <input type="checkbox"/> AS/NZS60950        |                                  |                                  |                                  |
| <input type="checkbox"/> 韩国 / Korea                                 | <input type="checkbox"/> KC60950     |                                      |                                             |                                  |                                  |                                  |
| <input type="checkbox"/> 日本 / Japan                                 | <input type="checkbox"/> J61558      | <input type="checkbox"/> J60950      |                                             |                                  |                                  |                                  |

### 6.4 高压/DIELECTRIC STRENGTH Hi-Pot:

☐ I 类: 初级对次级/Primary to secondary: 1500Vac/5mA/60S for type test.

初级对 FG/ Primary to FG: 1500Vac/5mA/60S for type test.

☒ II 类: 初级对次级/Primary to secondary: 3000Vac/5mA/60S or 4242Vdc/5mA /60s for type test.

### 6.5 绝缘阻抗/Insulation resistance:

初级对次级/Primary to secondary: 20M $\Omega$  min at 500V DC.

### 6.6 EMI 标准/EMI STANDARD

Meets the Limits of/测试符合

<1>.Fcc part15 class B rules. <2>.EN55032 class B rules.

<3>. GB17625.1-2012. <4>.AS/NZS CISPR32:2015.

<5>.IEC61000-4-5. <6>.IEC61000-4-2.

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## 7、结构参数/MECHANICAL REQUIREMENT:

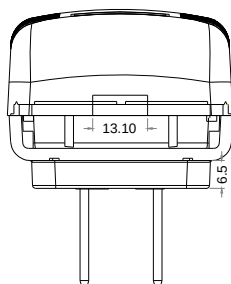
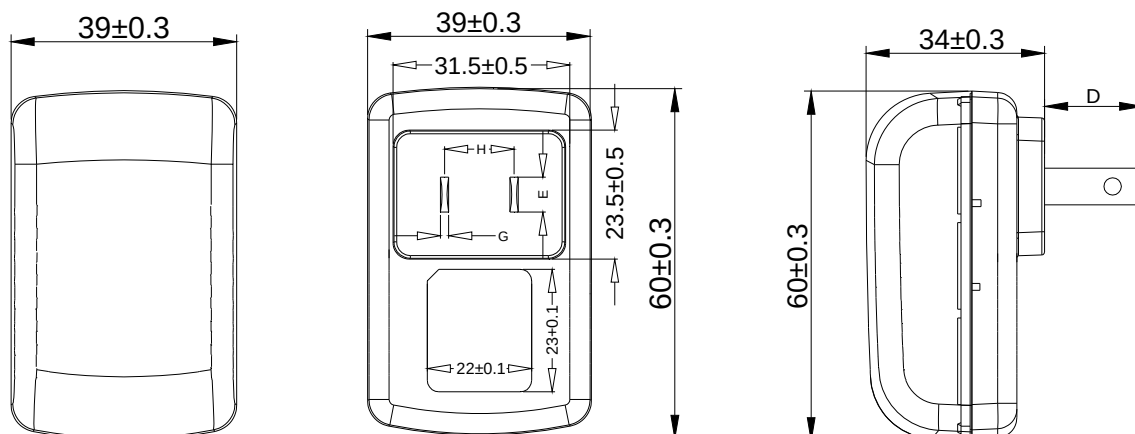
### 7.1 外壳类型: ☒ a、插墙式\SMPS Adaptor(Wall mount)、☐ b、桌面式\SMPS Adaptor(Desk-top)

- ☐ 中规/Chinese Plug ( ☐ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure ) 、  
☒ 美规/American Plug ( ☒ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure ) 、  
☐ 欧规/European Plug ( ☐ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure ) 、  
☐ 英规/United Kingdom Plug ( ☐ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure ) 、  
☐ 澳规/Australia Plug ( ☐ 光面\Smooth Enclosure ☒ 条纹\Rear Enclosure ) 、  
☐ 日规/Japan Plug ( ☐ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure ) 、  
☐ 韩规/Korean Plug ( ☐ 光面\Smooth Enclosure ☐ 条纹\Rear Enclosure )

### 7.2 外壳尺寸/ The power supply size:

- ☐ 中规/Chinese Plug : L60x W39x H34mm ☒ 美规/American Plug: L60x W39x H34mm  
☒ 欧规/European Plug: L60x W39x H44.5mm ☐ 英规/United Kingdom Plug: L60x W49x H34mm  
☐ 澳规/Australia Plug: L60x W39.5x H35.5mm ☐ 日规/Japan Plug: L60x W39x H34mm  
☐ 韩规/Korean Plug: L60x W39x H44.5mm

### 7.3 输入线/Input Connector: 2 Pin US 插脚/Two pin input plug of US.



| 符号/No. | 标准值/Standard datas(mm) |
|--------|------------------------|
| D      | 15.87-18.23            |
| E      | 6.09-6.60              |
| G      | 1.39-1.65              |
| H      | 12.7±0.127             |

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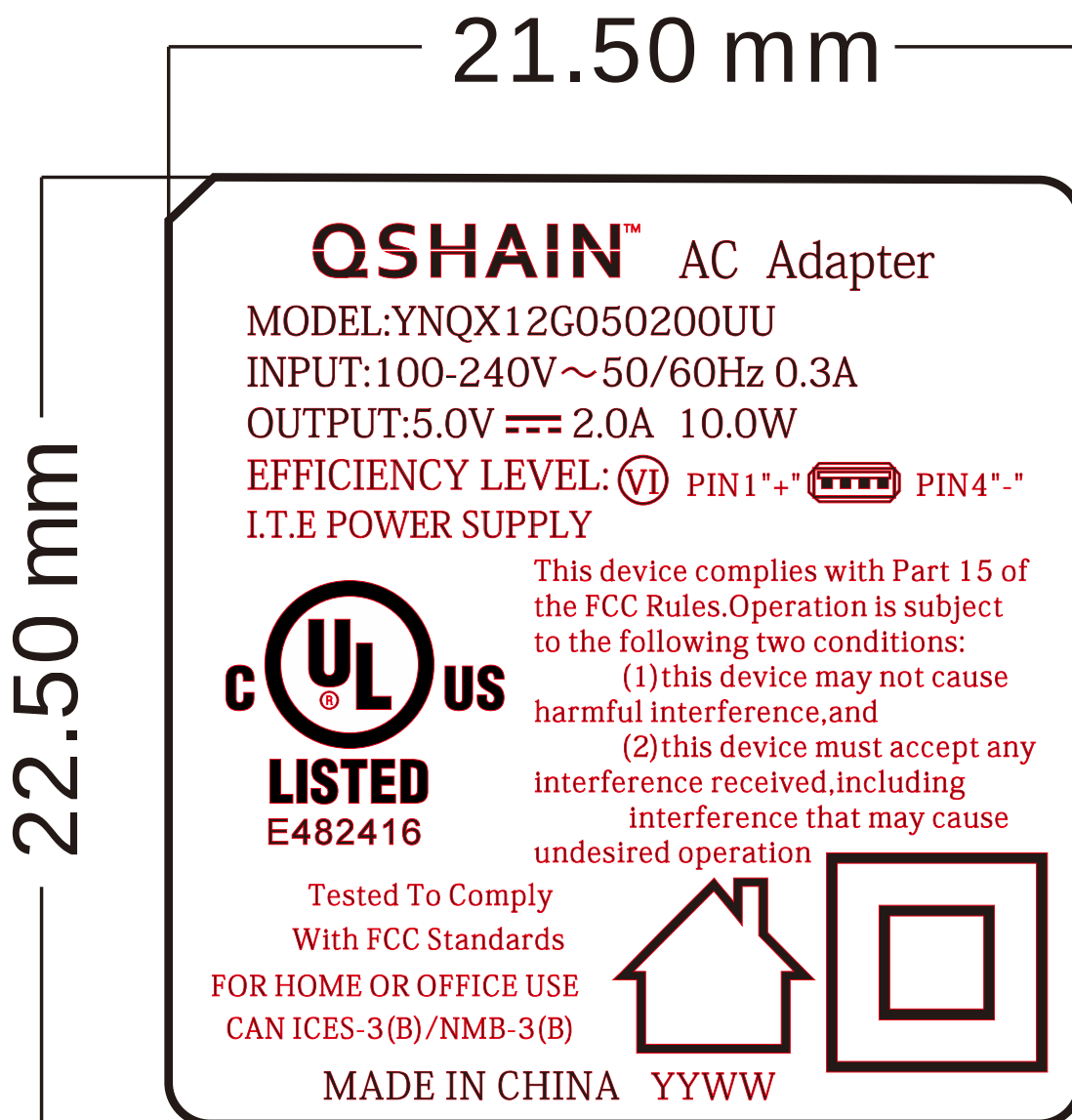
型号/Our model: YNQX12G050200UU

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8、铭牌/LABEL:



NOTES:

1. 激光丝印于外壳上
2. YYWW, YY 表示年份, WW 表示周数



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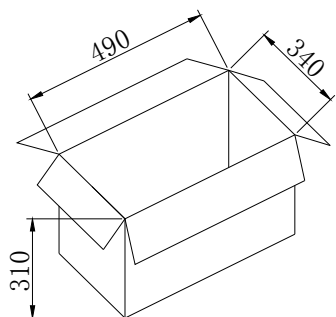
客户/Customer: SparkFun

日期/Date: 2020-06-19

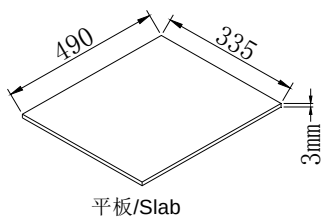
样品编号/SAMPLE No: QX202000648

## 9、包装说明/PACKING:

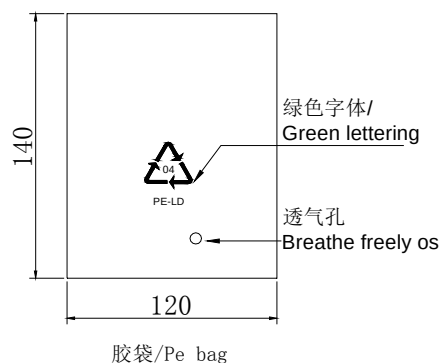
刀卡\Fluted Coupling Sheet + PE袋\PE Bag    □ 白盒\White Box + PE袋\PE Bag



外箱/Carton



平板/Slab



胶袋/Pe bag

包材/Packing:

A: L490\*W73mm

B: L340\*W73mm

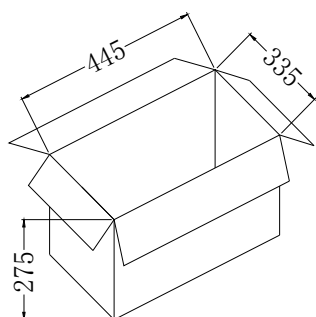
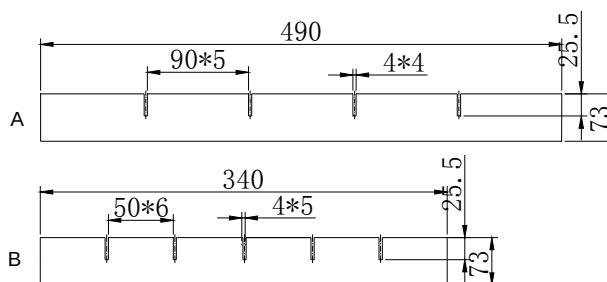
外箱内尺寸/Carton inside

size: L490\*W340\*H310mm

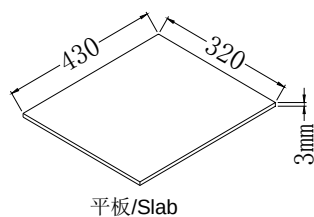
平板/Slab: L490\*W335\*T3mm

胶袋/Pe bag: L140\*W120\*T0.03mm

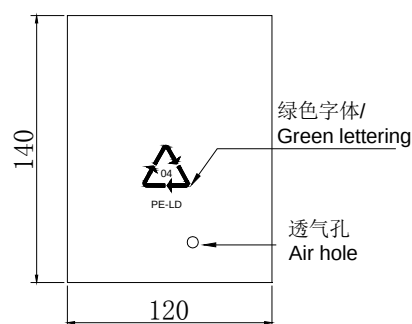
数量/Quantity: 120PCS/CTN



外箱/Carton



平板/Slab



包材/Packing:

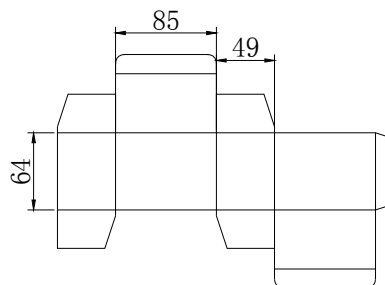
外箱内尺寸/Carton inside size: L445\*W335\*H275mm

平板/Slab: L430\*W320\*T3mm

小白盒/White box: L85\*W49\*H64mm

胶袋/Pe bag: L140\*W120\*T0.03mm

数量/Quantity: 120PCS/CTN



备注: 此包装材料仅供参考.

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## 11、测试报告/ELECTRICAL TEST REPORT:

| No<br>序号     | Test item<br>测试项目             | Test condition<br>测试条件                                                                                                | Standard spec<br>标准规格                                                                           | Test data<br>测试数据 |       |   |   |   | Unit<br>单位 | Judge<br>判定 |
|--------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------|-------|---|---|---|------------|-------------|
|              |                               |                                                                                                                       |                                                                                                 | 1                 | 2     | 3 | 4 | 5 |            |             |
| 1            | Output Voltage<br>输出电压        | Vin100Vac 60Hz Io=0<br>输入 100Vac 空载                                                                                   | 4.7-5.3 V                                                                                       | 5.01              | 5.02  |   |   |   | V          | Pass        |
| 2            | Output Voltage<br>输出电压        | Vin100Vac 60Hz Io=Rated Current<br>输入 100Vac 60Hz 负载<br>额定电流 2A                                                       | 4.7-5.3 V                                                                                       | 5.04              | 5.05  |   |   |   | V          | Pass        |
| 3            | Efficiency<br>平均效率            | Vin 115Vac 60Hz<br>输入 115Vac 60Hz                                                                                     | Average Efficiency<br>平均效率 78.70%                                                               | 79.04             | 79.05 |   |   |   | %          | Pass        |
|              |                               |                                                                                                                       | 10%负载效率                                                                                         | 79.91             | 79.92 |   |   |   |            |             |
| 4            | Ripple&Noise mVp-p<br>纹波&杂讯   | Vin100Vac 60Hz Full load<br>输入 100Vac 60Hz 满载                                                                         | 200mVp-p                                                                                        | 76                | 78    |   |   |   | mVp-p      | Pass        |
| 5            | Line Regulation<br>线性调整率      | Vin=100V~240V Io=Rated Current<br>额定电流                                                                                | ±2%                                                                                             | OK                | OK    |   |   |   |            | Pass        |
| 6            | Standby Power<br>待机功耗         | Vin 115Vac 60Hz Io=0<br>输入 115Vac 60Hz                                                                                | 0.1W max                                                                                        | 0.04              | 0.05  |   |   |   | W          | Pass        |
| 7            | Short circuit test<br>短路测试    | Vin100Vac 60Hz<br>输入 100Vac 空载                                                                                        | No odor smoke fire<br>plastic deformation and<br>excessive heat happen.<br>无冒烟,起火,外壳变<br>形及过热现象 | OK                | OK    |   |   |   |            | Pass        |
| 8            | OCP<br>过流保护                   | Vin 100Vac 60Hz<br>输入 100Vac                                                                                          | A Max                                                                                           | 2.4               | 2.5   |   |   |   | A          |             |
| 9            | Output Voltage<br>输出电压        | Vin240Vac 50Hz Io=0<br>输入 240Vac 空载                                                                                   | 4.7-5.3 V                                                                                       | 5.02              | 5.03  |   |   |   | V          | Pass        |
| 10           | Output Voltage<br>输出电压        | Vin240Vac 50Hz Io=Rated Current<br>输入 240Vac 60Hz 负载<br>额定电流 2A                                                       | 4.7-5.3 V                                                                                       | 5.04              | 5.05  |   |   |   | V          | Pass        |
| 11           | Efficiency<br>平均效率            | Vin230Vac 50Hz<br>输入 230Vac 50Hz                                                                                      | Average Efficiency<br>平均效率 78.70%                                                               | 78.77             | 78.78 |   |   |   | %          | Pass        |
|              |                               |                                                                                                                       | 10%负载效率                                                                                         | 76.08             | 76.09 |   |   |   |            |             |
| 12           | Ripple & Noise mVp-p<br>纹波&杂讯 | Vin240Vac 50Hz Full load<br>输入 240Vac 50Hz 额定电流                                                                       | 200mVp-p                                                                                        | 79                | 80    |   |   |   | mVp-p      | Pass        |
| 13           | Line Regulation<br>线性调整率      | Vin=100V~240V Io=Rated Current<br>输入 100V~240V                                                                        | ±2%                                                                                             | OK                | OK    |   |   |   |            | Pass        |
| 14           | Standby Power<br>待机功耗         | Vin230Vac 50Hz Io=0<br>输入 230Vac 50Hz                                                                                 | 0.1W max                                                                                        | 0.09              | 0.1   |   |   |   | W          | Pass        |
| 15           | Short circuit test<br>短路测试    | Vin240Vac 50Hz<br>输入 240Vac 50Hz                                                                                      | No odor smoke fire<br>plastic deformation and<br>excessive heat happen.<br>无冒烟,起火,外壳变<br>形及过热现象 | OK                | OK    |   |   |   |            | Pass        |
| 16           | OCP<br>过流保护                   | Vin 230Vac 60Hz<br>输入 230Vac                                                                                          | A Max                                                                                           | 2.3               | 2.4   |   |   |   | A          |             |
| 17           | Hi-pot test<br>高压测试           | 高压/DIELECTRIC STRENGTH Hi-Pot: 初级对次级<br>/Primary to secondary: 3000Vac/5mA/60S or 4242Vdc<br>/5mA /60s for type test. |                                                                                                 | OK                | OK    |   |   |   |            | Pass        |
| 18           | Burn in<br>老化                 | Input:220Vac/50Hz Full Load 4hrs<br>输入 220Vac/50Hz 满载 4 小时                                                            |                                                                                                 | OK                | OK    |   |   |   |            | Pass        |
| 19           | Drop test<br>跌落               | Heigh:1m Three*fases(once on each plane)<br>高 1 米,3 个面,每面 1 次.                                                        |                                                                                                 | OK                | OK    |   |   |   |            | Pass        |
| REMARK<br>备注 |                               |                                                                                                                       |                                                                                                 |                   |       |   |   |   |            |             |