

**CUSTOMER**

**JAMES**

**SPECIFICATION FOR APPROVAL**

**AC/DC ADAPTOR**

**CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 5VDC 2000mA**

**CUSTOMER DWG./PART NO.**

**PART NO. DCT12W050200US-A0**

**SAMPLE NO: SD2020111138 REV.: ISSUE DATE: 2020-12-24**

**PRDUCT NO:**

**Unit Color: Black**



**White**



<b>APPROVED SIGNATURES/客户确认</b>		
<b>核准/APPROVED BY</b>	<b>审核/CHECKED BY:</b>	<b>检测/TESTED BY:</b>

<b>Manufacturer/制造商</b>			
<b>业务/SALES</b>	<b>品管/QE</b>	<b>核准/APPROVED BY</b>	<b>制样/DESIGNED BY</b>
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## E. C. LIST

<b>Rev.</b>	<b>Description</b>	<b>Date</b>	<b>Remark</b>
<b>A0</b>	<b>First Released</b>	<b>2020-12-04</b>	

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## 1. SCOPE 概述

The document details the electrical, mechanical and environmental specifications of a SMPS. The power supply provides rated 10W continuous output power with 2Pin input.

## 2. Input Characteristics 输入特性

### 2.1. Input Voltage & Frequency 输入电压与频率

The range of input voltage is from 90Vac to 264Vac single phase.

	Minimum	Nominal	Maximum
Input Voltage	90Vac	100Vac~240Vac	264Vac
Input Frequency	47Hz	60Hz/50Hz	63Hz

### 2.2. Input AC Current 输入电流

0.3A max. @ 100-240Vac input & Full load

### 2.3. Inrush Current (cold start) 开机浪涌

The PSU should not get damaged

### 2.4. Averaged Efficiency 平均效率

78.70% min. @ 115Vac/60Hz&230Vac/50Hz input with 25%, 50%, 75% and 100% load

### 2.5. Energy Consumption 空载损耗

0.1W max. @ 115/230Vac input with no load

## 3. Output Characteristics 输出特性

### 3.1. Static Output Characteristics 静态输出特性

Output Rate	Load			Output Range	R+N	Remark
	Min. Load	Rated Load	Max. Load			
+5.0V	0.0A	2.0A	2.0A	4.75V ~ 5.25V	150mVp-p	100-240Vac

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 at 25°C & burn in 5 mins)

### 3.2. Line/ Load Regulation 线性/负载调整率

Output Rate	Load Condition			Line Regulation	Load Regulation
	Min. Load	Rated Load	Max. Load		
+5.0V	0.0A	2.0A	2.0A	± 5%	± 5%

### 3.3. Turn - on Delay Time 开机延迟

3S max. @115/230Vac input & Full load

### 3.4. Hold-up Time 关机维持

5ms min @115/230Vac input with Full load at 0 degree.

### 3.5. Rise Time 上升时间

50mS max. with full load

### 3.6. Fall Time 下降时间

50mS max. with full load

### 3.7. Overshoot/Undershoot 过冲

5% max. When the power on or off with full load

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### 3.8. Dynamic 动态

Output voltage within 4.0-6.0V for load step from 20% to 80%, R/S: 0.1A/uS,  
T1=T2=50mS

## 4. Protection Requirements 保护特性

### 4.1. Over Current Protection (OCP)过流保护

2.05A<OCP<3.0A & Recovery

### 4.2. Short Circuit Protection (SCP)短路保护

No damage & Recovery

### 4.3. Over Voltage Protection (OVP)过压保护

No damage & Recovery

## 5. Environment Requirements 环境要求

### 5.1. Operating Temperature and Relative Humidity 工作温度/湿度

-10°C ~ +40°C

10%RH ~ 90%RH non-condensing

### 5.2. Storage Temperature and Relative Humidity 存储温度/湿度

-20°C ~ +80°C

10%RH ~ 90%RH non-condensing

### 5.3. Altitude Range 海拔高度

Sea level shall be lower than 2000m

## 6. Reliability Requirements 可靠性要求

### 6.1. Burn-in 老化

The power supply shall be burn-in for 2 Hours under variable voltage of 100V, 240V input and 100% rated load at 40°C~45°C

### 6.2. MTBF 平均故障间隔时间

The MTBF shall be at least 30,000hours (SR-332) at 25°C, @115/230Vac input with full load .

### 6.3. E-cap Life 电容寿命

The lifetime shall be at least 3 years @25°C, @115/230Vac input with 80% load .

## 7. Mechanical Requirements 结构要求

### 7.1. Vibration 振动

Freq: 10Hz-500Hz

Displacement: 0.35mm peak

Acceleration: 49m/s<sup>2</sup>

Number of Sweeps: 2

Sweep Duration: 15 min cycles in each axis X,Y,Z

### 7.2. Drop Test 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 10 drops (6 faces + 3 edges+ 1 corner).

## 8. EMC Standards 电磁兼容

### 8.1. EMI Standards 电磁干扰

FCC Part15
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### 8.2. EMS Standards 电磁抗扰

#### 8.2.1 Standard

EN 61000-4-2	(ESD)Electrostatic Discharge: air $\pm 8\text{kV}$ , contact $\pm 4\text{kV}$ , (Criteria A)
EN 61000-4-4	(EFT)Electrical Fast Transient/Burst: 1KV (Criteria A)
EN 61000-4-5	(Surge)Differential Mode : $\pm 1\text{kV}$ ;Common Mode: $\pm 2\text{kV}$ (Criteria A)

#### 8.2.2 Assessment criteria

Acceptance criteria	performance
A	Agreed operational behavior within the specified limits
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention.

## 9. Safety Standards 安规标准

### 9.1. Dielectric Strength (Hi-pot)高压

Primary to Secondary: 3000Vac / 10mA Max / 60second (3second for production)

### 9.2. Leakage Current 漏电流

0.25mA max. at 264Vac / 50Hz

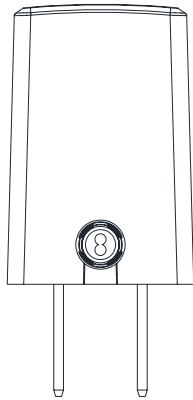
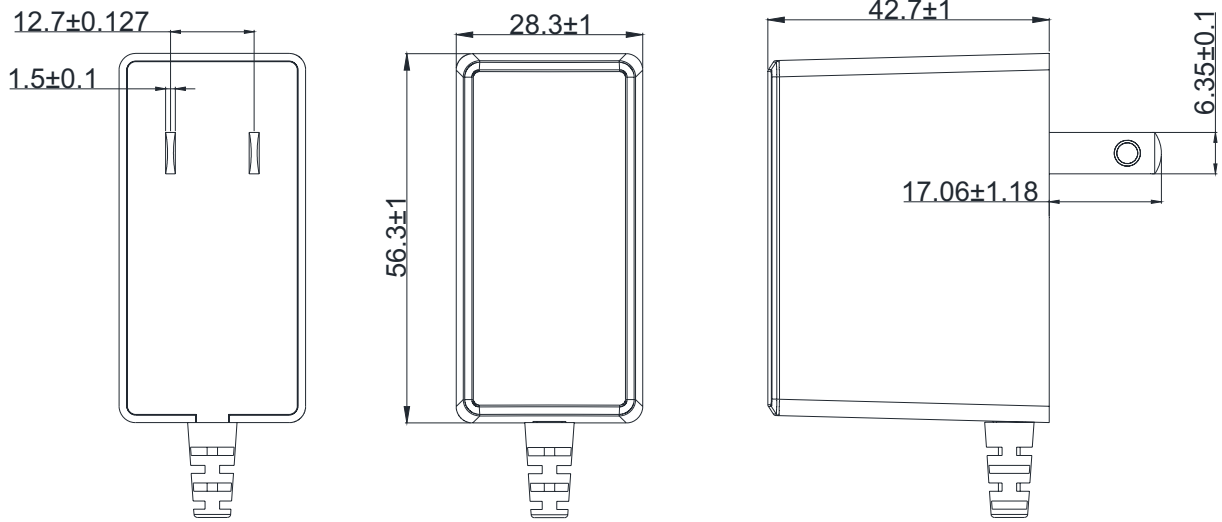
### 9.3. Insulation Resistance 绝缘阻抗

100M $\Omega$  min. at primary to secondary add 500Vdc test voltage.

### 9.4. Regulatory Standards 标准

Type	Country	Standard	State	Note
UL	USA	UL62368	Approved	

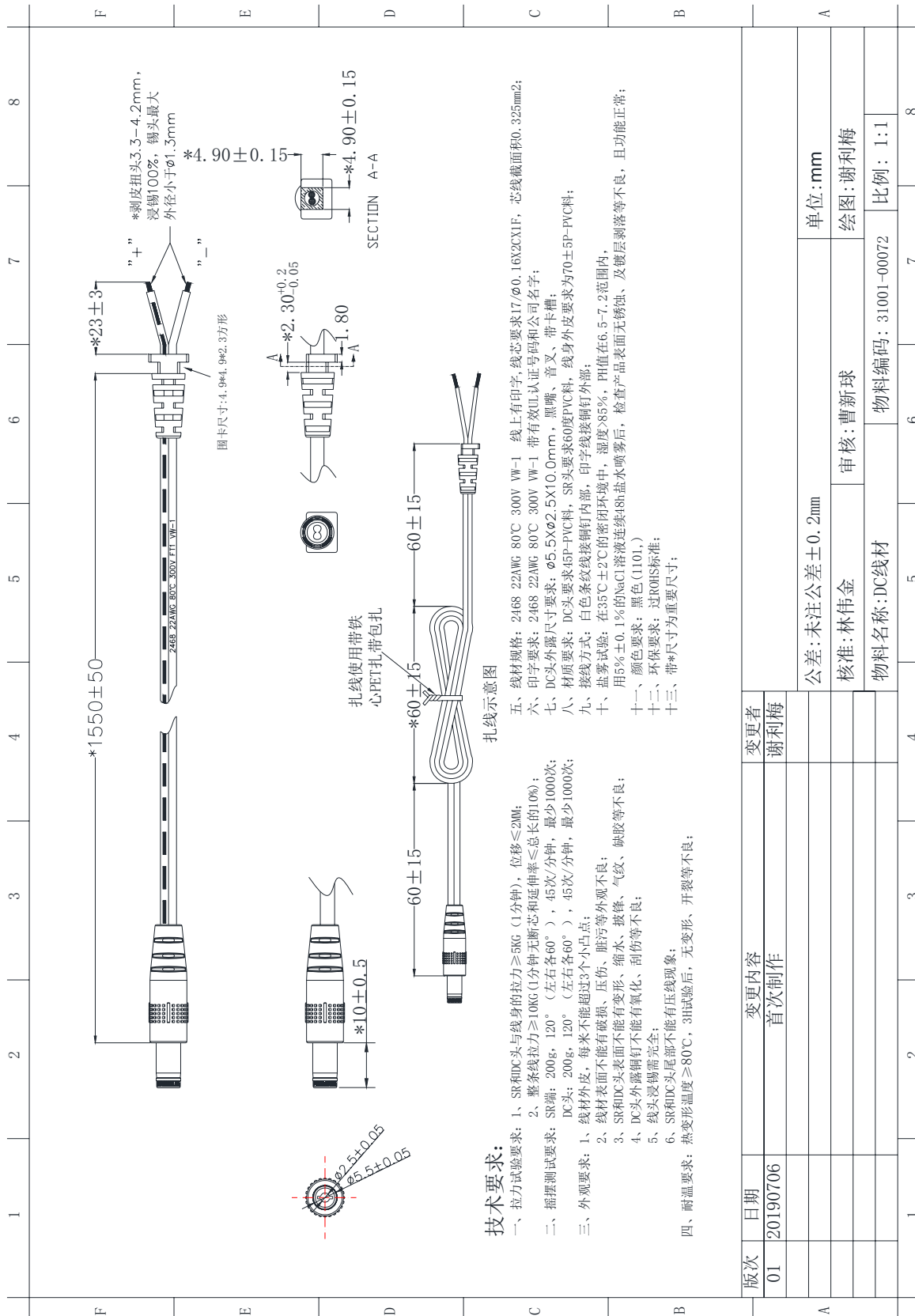
## 10. Match. Outline Drawing 外观



Unit:mm  
Other tolerance:  $\pm 0.5$



# 11. DC Cord Drawing 线材

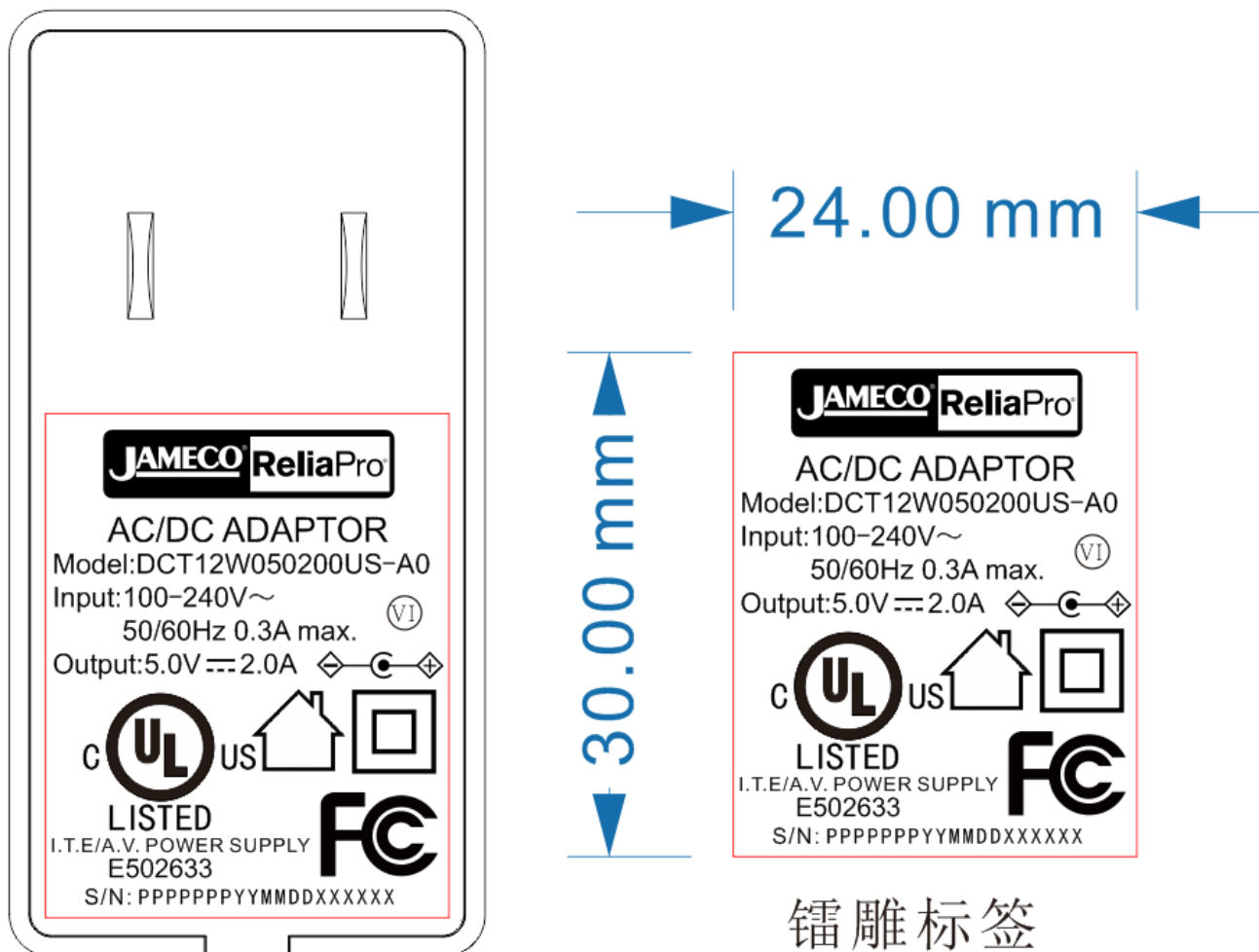


## 技术要求:

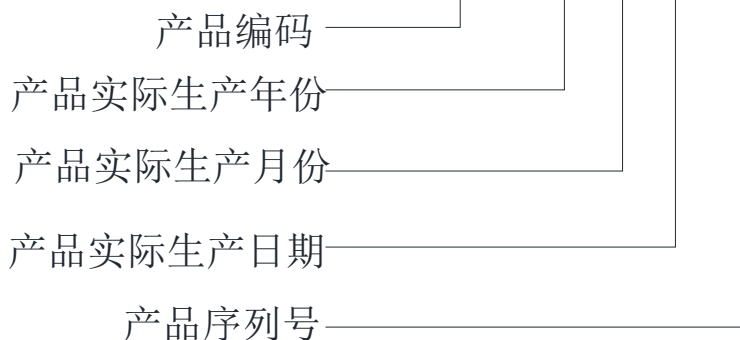
- SR和DC头与线身的拉力 $\geq 5\text{KG}$  (1分钟), 位移 $\leq 2\text{MM}$ ;
- 整条线拉力 $\geq 10\text{KG}$  (1分钟无断芯和延伸率 $\leq$ 总长的10%);
- 摇摆测试要求: SR头: 200g, 120° (左右各60°), 45次/分钟, 最少1000次; DC头: 200g, 120° (左右各60°), 45次/分钟, 最少1000次;
- 外观要求: 1、线材外皮, 每米不能超过3个小凸点; 2、线材表面不能有破损、压伤、脏污等外观不良; 3、SR和DC头表面不能有变形、缩水、披锋、气纹、缺胶等不良; 4、DC头外露铜钉不能有氧化、刮伤等不良; 5、线头浸锡需完全; 6、SR和DC头尾部不能有压线现象;
- 四、耐温要求: 热变形温度 $\geq 80\text{C}$ , 3h试验后, 无变形、开裂等不良;
- 五、线材规格: 2468 22AWG 80C 300V VW-1 线上有印字, 线芯要求 $17/\phi 0.16\text{X}2\text{CXIF}$ , 芯线截面积 $0.325\text{mm}^2$ ;
- 六、印字要求: 2468 22AWG 80C 300V VW-1 带有UL认证号码和公司名字;
- 七、DC头外露尺寸要求:  $\phi 5.5\text{X}\phi 2.5\text{X}10.0\text{mm}$ , 黑嘴、音叉、带卡槽;
- 八、材质要求: DC头要求45P-PVC料, SR头要求60度PVC料, 线身外皮要求为 $70\pm 5\text{P-PVC}$ 料;
- 九、接线方式: 白色条纹线接铜钉内部, 印字线接铜钉外部;
- 十、盐雾试验: 在 $35\text{C}\pm 2\text{C}$ 的密闭环境中, 湿度 $>85\%$ , PH值在 $6.5-7.2$ 范围内, 用 $5\%\pm 0.1\%$ 的 $\text{NaCl}$ 溶液连续 $48\text{h}$ 盐水喷雾后, 检查产品表面无锈蚀, 及镀层剥落等不良, 且功能正常;
- 十一、颜色要求: 黑色 (1101,)
- 十二、环保要求: 过ROHS标准;
- 十三、带\*尺寸为重要尺寸;

版次	日期	变更内容	变更者
01	20190706	首次制作	谢利梅
		公差: 未注公差 ±0.2mm	单位: mm
		核准: 林伟金	审核: 曹新球
		物料名称: DC线材	物料编码: 31001-00072
			比例: 1:1
			绘图: 谢利梅

## 12. Marking Drawing 铭牌



S/N: P P P P P P Y Y M M D D X X X X X X

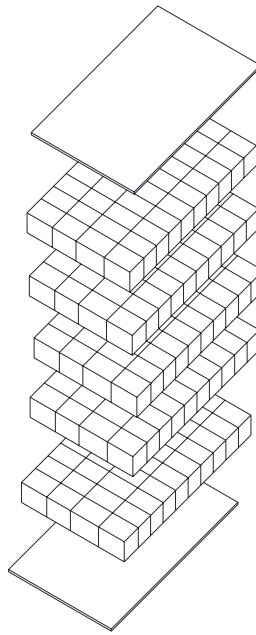
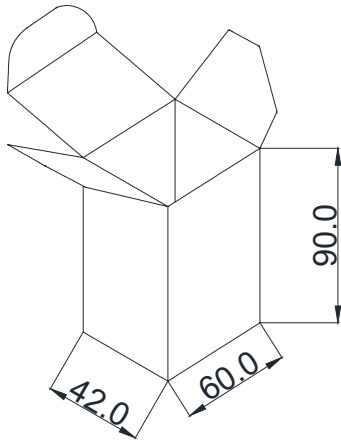


产品编码;例如: 90001-00283-US为00283US

日期按实际生产日期填写, 例如: 2020年09月20日为200920

产品序列号; 例如: 000001、000002……

# 13. Package Drawing 包装



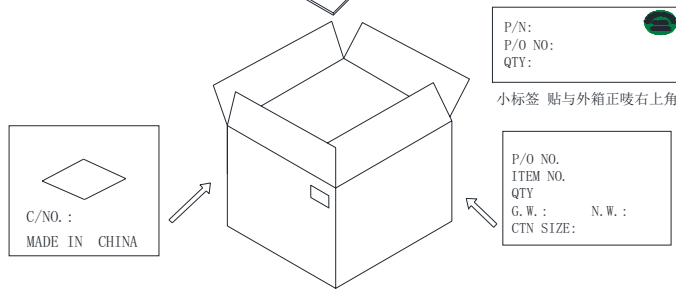
**包装说明:**

一、将产品每PCS装入60\*90\*42 (mm)小白盒中包好, 每层装40PCS, 共装5层, 每箱装200PCS

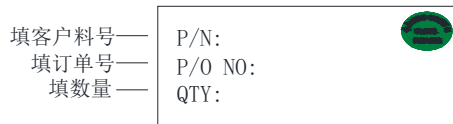
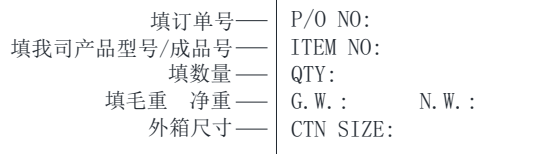
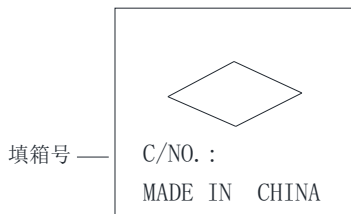
即: 40pcs/层\*5层=200PCS/箱

二、包装材料使用说明为:

- 1、小白盒60\*42\*90mm用量200pcs
- 2、平卡435\*375mm用量:2PCS
- 3、纸箱450\*390\*335mm: 1PCS



纸箱的外尺寸: L450\*W390\*H335 MM



## 14. CERTIFICATE 证书

### CERTIFICATE OF COMPLIANCE

**Certificate Number** 20190114-E502633  
**Report Reference** E502633-A6001-UL  
**Issue Date** 2019-JANUARY-14

**Issued to:** Zhuzhou Dachuan Electronic Technology Co Ltd  
Building A5 Nanzhou Industrial Park  
Zhuzhou  
Hunan 412101 China

**This certificate confirms that representative samples of** POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT  
See Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 62368-1 and CAN/CSA C22.2 No. 62368-1-14, Audio/video, information and communication technology equipment Part 1: Safety requirements

**Additional Information:** See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program  
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# CERTIFICATE OF COMPLIANCE

Certificate Number 20190114-E502633  
Report Reference E502633-A6001-UL  
Issue Date 2019-JANUARY-14

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

AC/DC ADAPTOR; Models:  
DCT12WXXXYYZZ-A0, DCT12WXXXYYZZ-B0, DCT12WXXXYYZZ-C0, DCT12WXXXYYZZ-D0,  
where "XXX" will be replaced by 050-240, indicates output voltage 5.0-24.0 Vdc, with steps of 0.1 V;  
"YYY" will be replaced by 001-240, indicates output current 0.01-2.4 A, with steps of 0.01 A; The  
maximum output power is 12 W. "ZZ" will be replaced by "EU", "US", "CN" or "ZZ", indicates plug type.



Bruce Mahrenholz, Director North American Certification Program  
UL LLC

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