

# 产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP18050201/A1

客户 Customer	AKON	核准 Approval	ZL
品名 Product	开关电源 Switching power supply	品管确认 QC	LTF
型号 Model	AD-K120P300	审核 Check	ZL
日期 Date	2025-05-13	拟制 Execution	BMD

客户承认意见 Confirmation by Customer	客户签署 Stamp & Signature
<input type="checkbox"/> 合格 Accept	
<input type="checkbox"/> 不合格 Reject	
<input type="checkbox"/> 条件合格 Conditional Acceptance	

确认签署后，请回传一份。有任何问题，请尽快告知我们。

Please return one copy to us with your signature and feel free to contact us for any questions.

厦门友盟电子有限公司

XIAMEN UME ELECTRONICS CO., LTD.

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**\* The products limited warranty period is 18 months.  
(From date code of product.)**

**● The products meet RoHS requirements.**

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## 2 概述 Summary

2.1 本文件包含一般的客户要求及电气、机构和安全性能等方面的描述。

This document contains general customer requirements and those of specific electrical, mechanical and safety for this product.

## 3 技术要求 Technical requirements

### 3.1 安全标准 Safety Standards

Japan: 電安法别表第八【JET6108-61010-1020】

### 3.2 Input

Rated Input Voltage	100-240Vac
Operating Range	90-264Vac
Rated Input Frequency	50~60Hz
Rated Input Current	0.8A
Maximum Input Power	44W
Input Power (No Load)	0.1W Max
Primary Current Protection	Current fuse

### 3.3 Output

Rated output voltage	12V ± 5%
Rated Load Current	3000mA
Over Current Protection	4A Min @Vin=100Vac/240Vac
Line Regulation	The line regulation is less than ±2% while measuring at rated load and +/-5% of input voltage changing.
Ripple	≅ 200mVp-p
Switching Efficiency	83% minimum@ input 115AC/230VAC, can meet Level V standard.
DC Plug	Φ2.1*5.5*9.5(EIAJ)
DC Cord	18AWG UL2464 L = 1500mm, Black Lead-free soldering

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### 3.4 Regulation:

IEEE1725 (IEEE Standard for Rechargeable Batteries for Cellular Telephones)  
 ENERGY STAR / California Appliance Efficiency Program (for US) : Level V  
 Australian and New Zealand Energy Performance Requirements (for NZ) : Level V  
 Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

### 3.5 可靠性及质量控制 Reliability and Quality Control

#### 【Electrical Test Items】

Item	Conditions	Criteria
1	Leakage Current Measure the leakage current between Primary and Secondary when adding rated input. AC input = Rating voltage (100/240V)	Less than 250 $\mu$ A
2	ESD Test 1. Test is conducted at room temperature/humidity.(25°C, RH 50-60%) 2. Test set is 150pF/150 $\Omega$ . 3.(1) $\pm$ 4KV:Contact discharge test. +phase: 3times, -phase: 3times, total: 6times. (2) $\pm$ 8KV:Air discharge test. +phase : 3times, -phase: 3times, total: 6times. (Note) After each ESD test, it should be discharged.	No malfunction (must be in spec after test).
	1. Test is conducted at room temperature/humidity.(25°C, RH 50-60%) 2. Test set is 150pF/150 $\Omega$ . 3.(1) $\pm$ 6KV:Contact discharge test. + phase: 3times, -phase: 3times total: 6times. (2) $\pm$ 10KV:Air discharge test. + phase: 3times, -phase: 3times, total: 6times. (Note)After each ESD test, it should be discharged.	No destruction
	ESD Test (Ability test) 1. Test is conducted at room temperature/humidity.(25°C, RH 50-60%) 2. Test condition: 150pF/150 $\Omega$ . 3,Contact discharge / Air discharge 4,Load: 1)no load 2)rated load 5. Impressing 10 times continuously to plus and minus each. 6,Discharging once after impressing 10 times (To confirm the capacity of unit up to the unit destroyed)	It confirms at which voltage value the adapter breaks.(Note: Not part of qualification)
3	Hi-POT test Condition=AC3000V, 1min. Test place=Between AC blade and DC plug	No malfunction. (damage, arc, breakdown etc)

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		Sensitivity current=10mA	
4	Insulation resistance	DC500V, 1min. Between AC blade and DC plug	More than 100MΩ
5	Temperature Rise Test	1.Apply rating input voltage(100/240V), 2.Load: Charge actual Cellular phone 3.Measure the surface temperature of the adaptor 4.T ambient = The room temperature 5.Condition: Until it carries out temperature saturation (the definition of temperature than 1℃ in 1 hour).	Housing surface Temperature rise is less than 45K.
		1.Apply rating input voltage(100/240V), 2.No Load 3.Measure the surface temperature of the adaptor	Housing surface Temperature rise is less than 15K.
6	Input over / under	Apply voltage=(rating input voltage)x(1±30%) Impressed time : 24h	No destruction
7	EMI/Conducted Emission	Telephone stand by mode with rapid-charge condition	Conform to: FCC 47CFR Part 15 Class B J55014-1
8	Surge	IEC61000-4-5 1.2×50μs 1.0KV Positive and negative all three times, Current limiting impedance 100 Ω, Time interval 30 seconds min.	No destruction.

**【Environmental Test Items】**

Item	Conditions	Criteria
1	Electrical performance guarantees temperature range: 0℃ to 40℃ Electrical performance not guarantees working temperature range: -20℃ to 50℃ Storage temperature range: -30℃ to 80℃	No abnormal appearance, mechanic performance or electric performance
2	1. Temperature 80℃ for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition for more than 1hour, then evaluate.	No abnormal appearance, mechanic performance or electric performance
3	1. Temperature -30℃ for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 1(hour), then evaluate.	
4	1. Temperature 50℃, air moisture 90-95% RH for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 30min, then evaluate.	

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5	Temperature Humidity test	1. Temperature 40°C, air moisture 90-95% RH for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 30min, then evaluate.
6	Heat Shock Test	1. Condition: -30°C/ 1 hour to +80°C/ 1 hour, 60 cycles 2. After that test, test set is left in normal temperature, humidity condition more than 1 hour, then evaluate.
7	Heat/humidity Cycle Test	<p>A, C, D : RH=90±10% B : RH= 90±5% E : No limit After 5cycles, put EUT at room temperature/humidity condition</p> <p>The graph shows a temperature profile with five distinct phases labeled A through E. The y-axis represents temperature in degrees Celsius, with markers at +70, +45, 室温 or +20, and -20. Phase A is a linear rise from room temperature to +70°C. Phase B is a horizontal hold at +70°C. Phase C is a linear fall from +70°C to +45°C. Phase D is a horizontal hold at +45°C. Phase E is a linear fall from +45°C to -20°C. After phase E, the temperature rises back to room temperature.</p>

**【Mechanical Test Items】**

Item	Conditions	Criteria
1	Drop Test	No parts remove, no abnormal mechanic performance, (outside scratches are acceptable)
2	Package Drop Test	
3	Unit Vibration Test	
4	Package Vibration	
5	AC Plug in/out Test (AC Blade part)	
6	Exfoliate with cellophane tape and	

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	examine it		body
7	The reliability to face each other to come off the label	① -40℃ ② 80℃ ③ 50℃ 90% Each 96 hours ④ ③ After, it is a thermal shock examination of 96 cycles	
8	No tally part step	Difference of the pitch by height differences of the tally part between casts	less than 0.25mm after an environmental examination

**【DC cord Test Items】**

Item	Conditions	Criteria
1	DC Cord strength (adaptor side / plug side) 1. Test part: Between adaptor and DC cord 2. Pull a cord with 98N(10Kgf) force 3. Time: 1min.	No abnormality such as wire cut, bushing come off
2	DC Cord Bending Test (adaptor side / plug side) Weight = 4.9N(500g) Angle = +/-90° Cycles in every minute = 40times/min. Test cycles = 1000times Note: contrarotate 90°, and then rotate it clockwise with 180°(+90° ~-90°) , and at last return to origin. ( 1 Cycle : 0° ⇒-90°⇒0°⇒+90°⇒0°)	Operate properly.

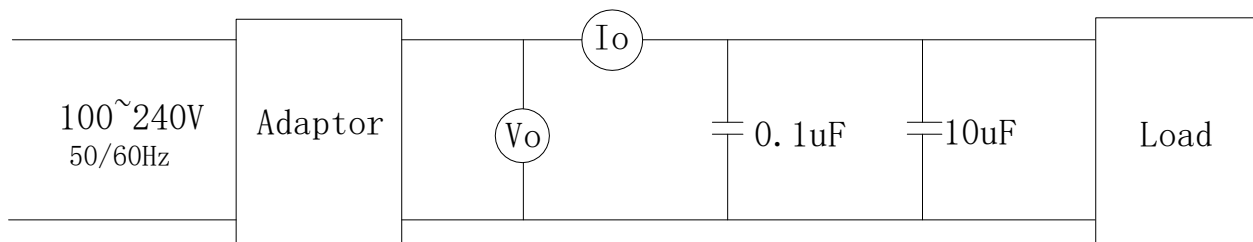
**【Safety Test Items】**

1	MTBF	Make a measurement condition, a calculation standard clear	More than 50,000 hours
2	Part materials	It is maintenance or the incombustibility of contact / part materials approaching it in an outer fence, the charge department of the electric part	same as UL94V-0; more than it
3	print board	Incombustibility	same as UL94V-0; more than it
4	No tally part step	Difference of the pitch by height differences of the tally part between casts	less than 0.25mm after an environmental examination

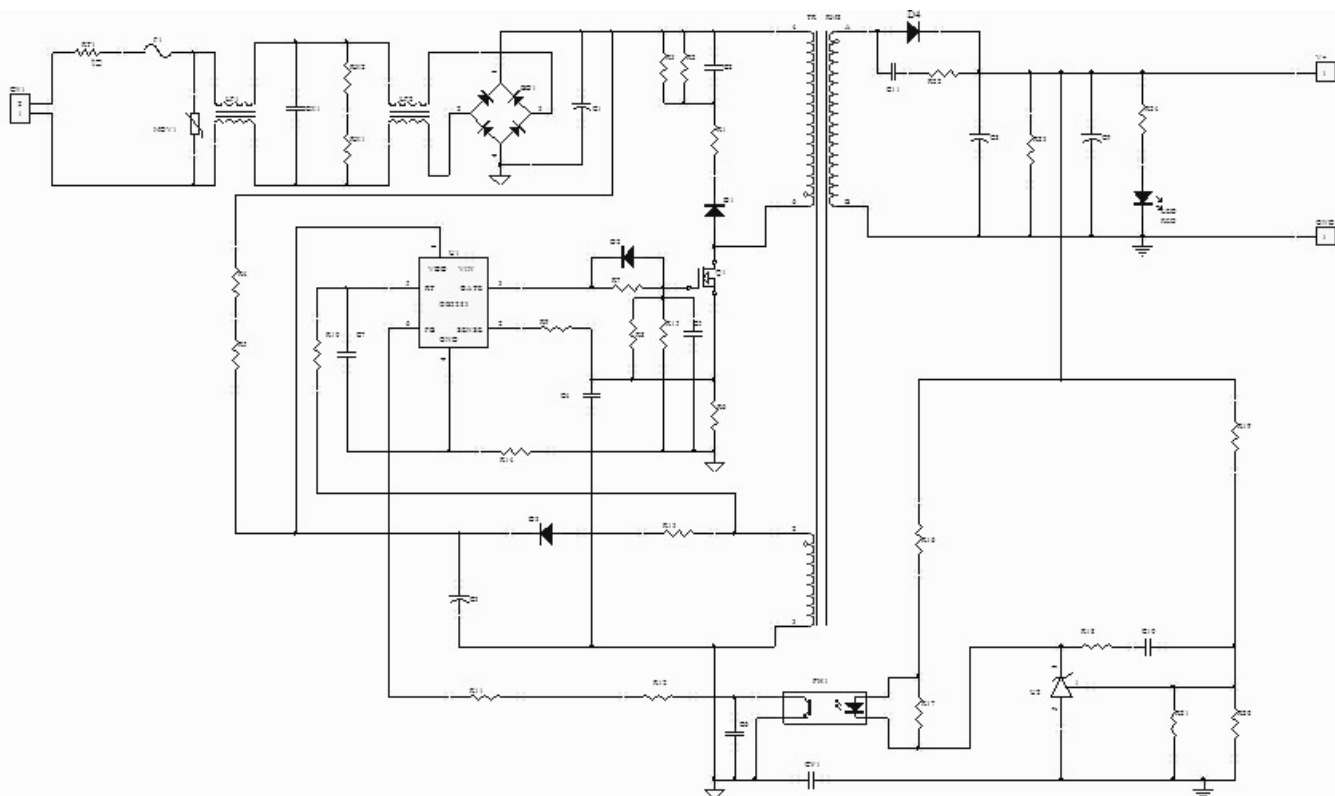
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### 3.6 测试线路图 Test Circuit



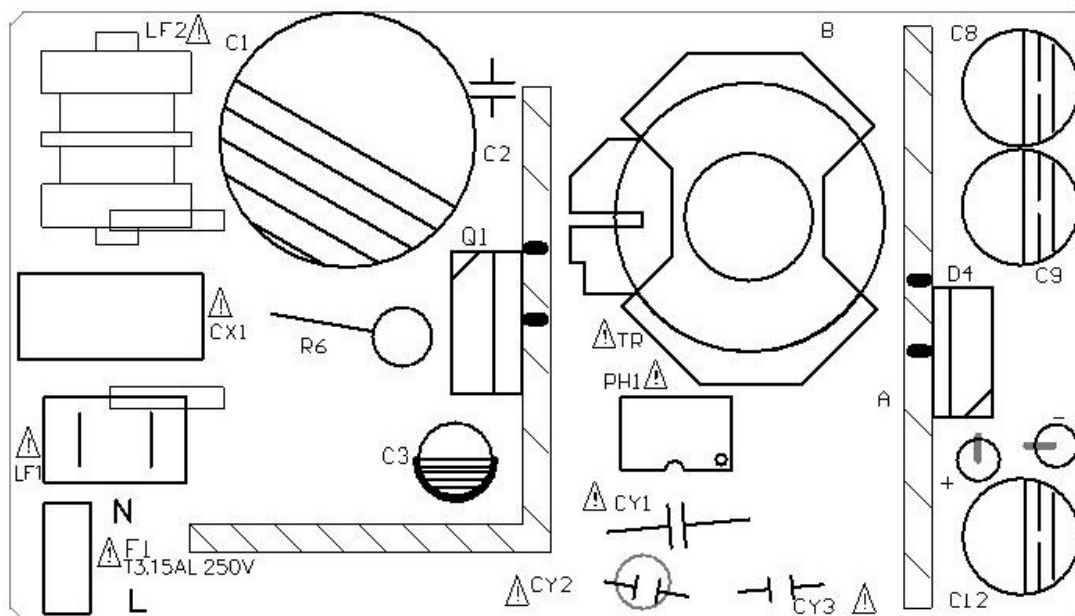
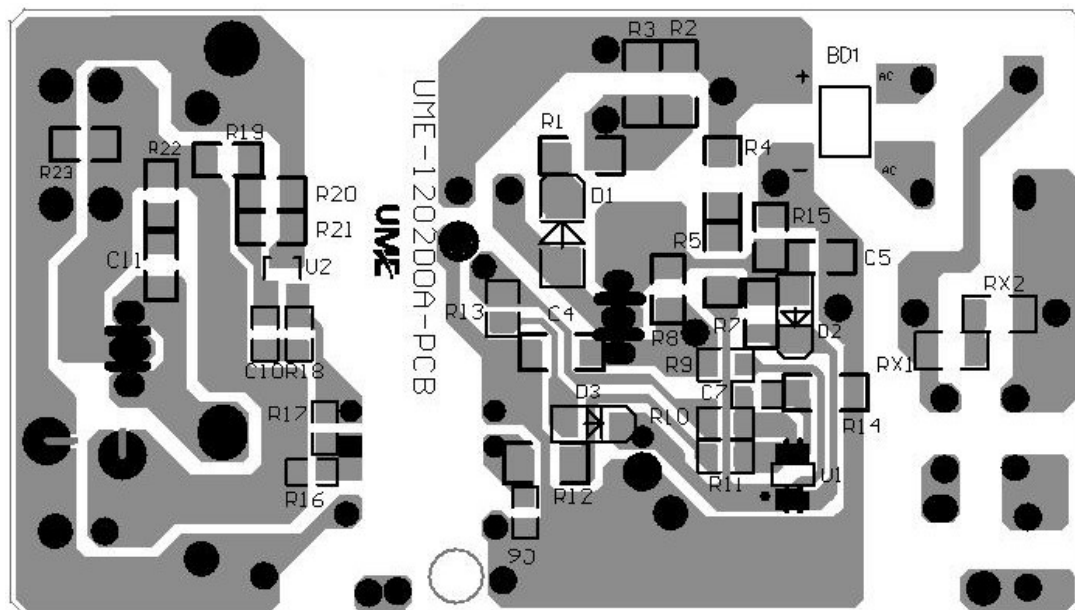
### 4 线路图 Schematic Diagram



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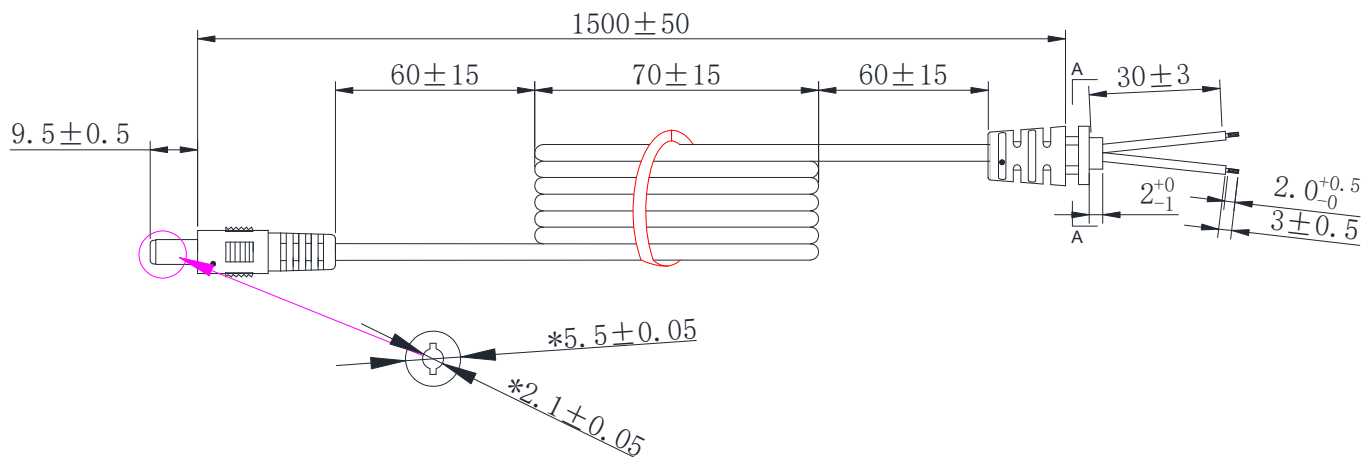
## 5 电路板图 P.C.B



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## 6 CORD 图 (单位 unit: mm 颜色 color: Black)



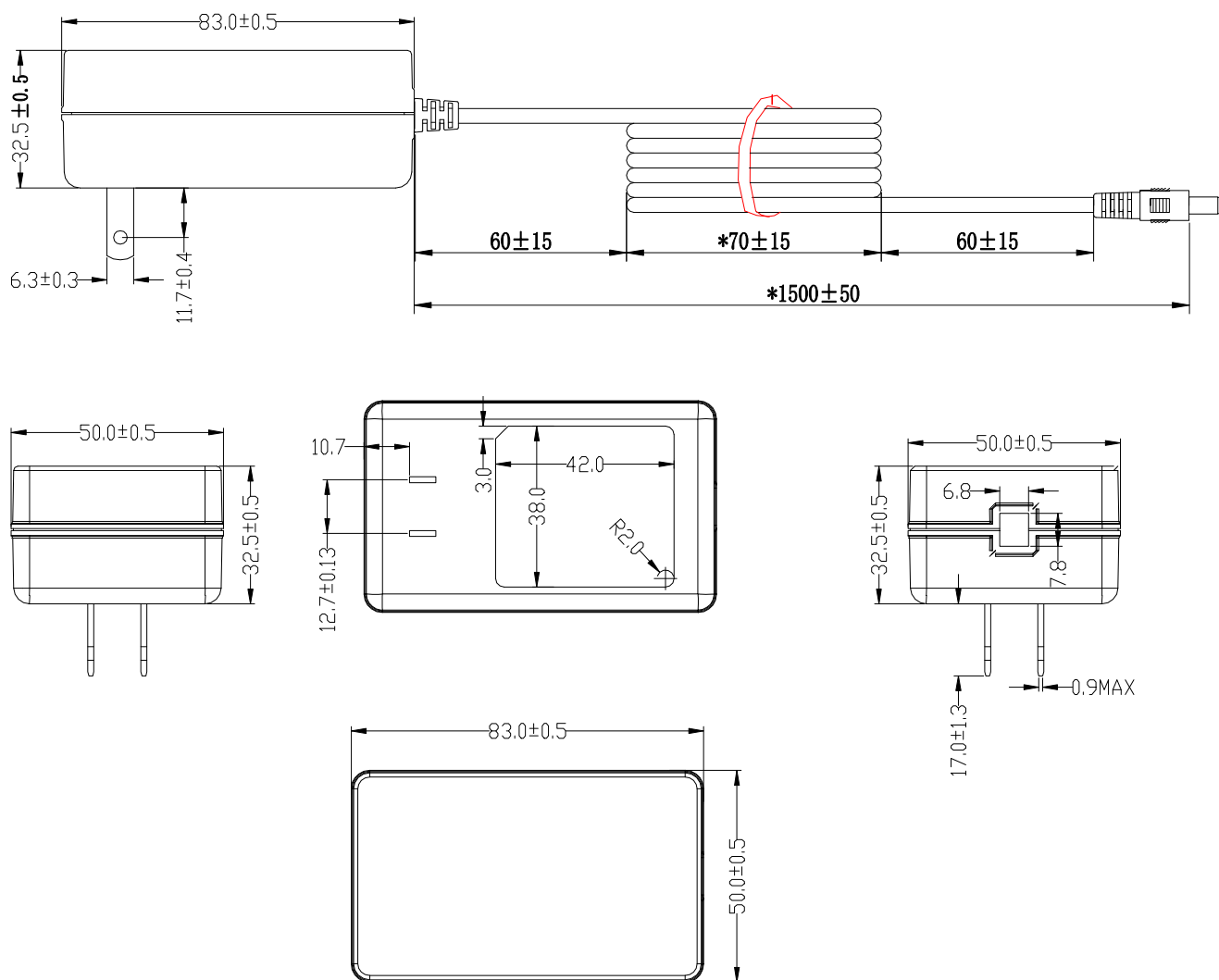
### 备注:

1. 导线规格: 18AWG 2464 音叉型 黑色, 芯线颜色: 红色+黑色, 导线总长 1500mm; 材质符合RoHS要求。导线按图示尺寸捆扎、测试, 导线间应开路, 对应线头线尾应短路导通, 极性连接正确;
2. 两头剥线焊锡, 剥线长度 $3\text{mm}+1/-0$ 。剥线要求如图所示, 剥丝线焊锡的直径为 $1.5\text{mm MAX}$ 。接线方式: 红色芯线接PIN中心, 黑色芯线接外侧, PG头成型, SR-002成型; SR002尺寸为 $6.8*7.8\text{mm}$ 。
3. SR拉力测试: 吊重 $1\text{Kg}/10$ 分钟, 不可有位移, 吊重 $5\text{Kg}/1$ 分钟, 位移 $2\text{mm MAX}$
4. 插拔力测试: 插入力 $2\text{Kg f MAX}$ , 拔出力 $0.3\text{Kg f MIN}$ ; 插拔 $6000\text{MIN}$ 次不允许有电气和机械性能的损坏, 且满足拔出力 $0.1\text{Kg f MIN}$ ;
5. 摇摆测试: 吊重 $500\text{g}$ , 以 $40$ 次/分作 $90^\circ$ 往返, 每一往返为一次, 至少 $1000$ 次;
6. PLUG绝缘阻抗测试:  $100\text{M}\Omega$  MIN在 $500\text{DC}/\text{分}$ ; PLUG接触阻抗测试:  $100\text{m}\Omega$  MAX;
7. 导线, SR, PLUG非移行性依据厂内一般进行; 禁止使用VDE所禁用的物质。
8. 打\*号尺寸, 为入料检查项目;

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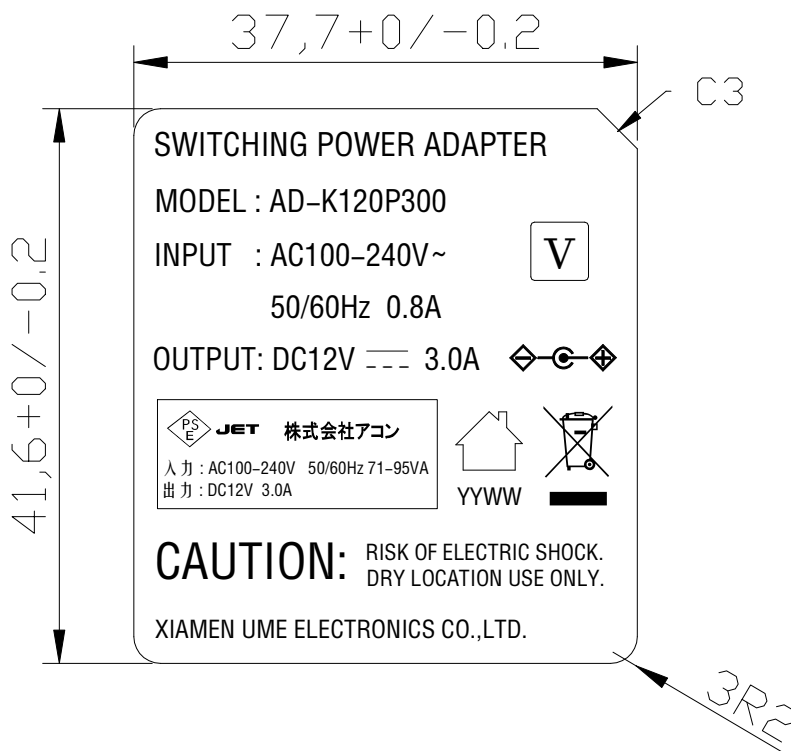
7 外观示意图 Cord and Mechanical Drawing (单位 unit: mm 颜色 color: Black)



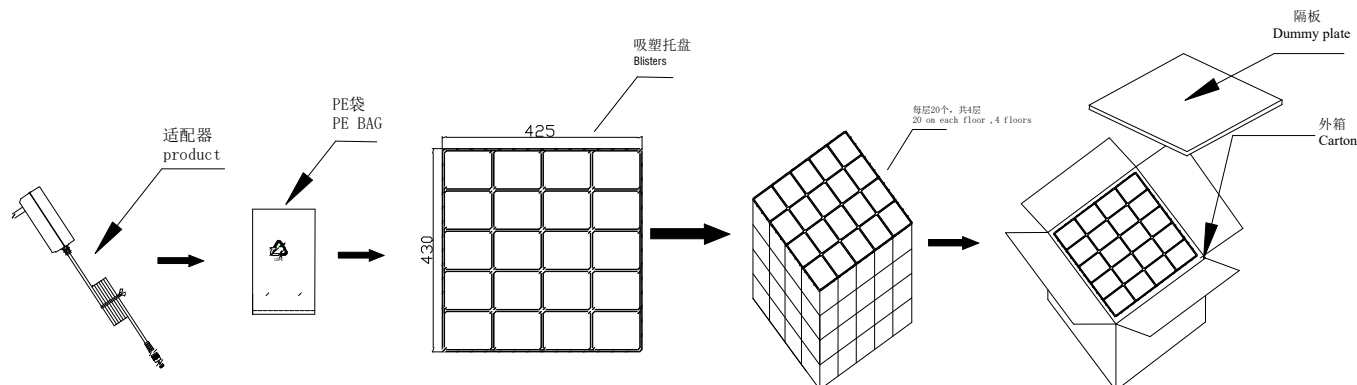
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## 8 铭板标识 Label



## 9 包装方式 Packaging



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## 10 材料清单 BOM

NO	ITEM	DESCRIPTION	SPECIFICATION	QTY	MANUFACTURER
1	PCB	PCB	UME-120200A-PCB	1	TXS/JT/MW/HG
2	RX1,RX2	Chip R	680K $\Omega$ ±5% 1206	2	YAGEO/FengHua
3	R1	Chip R	100 $\Omega$ ±5% 1206	1	YAGEO/FengHua
5	R2,R3	Chip R	750K $\Omega$ ±5% 1206	2	YAGEO/FengHua
6	R4,R5	Chip R	1.5M $\Omega$ ±5% 1206	2	YAGEO/FengHua
7	R7	Chip R	47 $\Omega$ ±5% 0805	1	YAGEO/FengHua
8	R8	Chip R	10K $\Omega$ ±5% 0805	1	YAGEO/FengHua
9	R9	Chip R	1K $\Omega$ ±5% 0805	1	YAGEO/FengHua
10	R10	Chip R	330K $\Omega$ ±5% 0805	1	YAGEO/FengHua
11	R11	Chip R	10 $\Omega$ ±5% 0805	1	YAGEO/FengHua
12	R13	Chip R	10 $\Omega$ ±5% 1206	1	YAGEO/FengHua
13	R12,R14	Chip R	0 $\Omega$ ±5% 1206	2	YAGEO/FengHua
14	R16,R17	Chip R	1K $\Omega$ ±5% 0805	2	YAGEO/FengHua
16	R18	Chip R	750 $\Omega$ ±5% 0805	1	YAGEO/FengHua
17	R19	Chip R	100K $\Omega$ ±1% 0805	1	YAGEO/FengHua
18	R20	Chip R	27K $\Omega$ ±1% 0805	1	YAGEO/FengHua
19	R21	Chip R	510K $\Omega$ ±1% 0805	1	YAGEO/FengHua
20	R22	Chip R	22 $\Omega$ ±5% 0805	1	YAGEO/FengHua
21	R23	Chip R	2K $\Omega$ ±5% 0805	1	YAGEO/FengHua
22	BD1	Diode	DB207S 800V 2A	1	XH
23		Diode	DI208S 800V 2A		QM
24	D1	Diode	M7 SMA	1	JF/GME/PANJIT
25	D2	Diode	1N4148W 75V 0.15A SOD-123	1	JF/EXCELL/PANJIT
27	D3	Diode	F7 1A/1000V/SOD-123FL	1	JF/ZW/PANJIT
28	C2	Chip C	102 500V±10% 1206 X7R	1	YAGEO/FENG HUA
29	C6	Chip C	103 50V±10% 0603 X7R	1	YAGEO/FENG HUA
30	C10	Chip C	104 50V±10% 0805 X7R	1	YAGEO/FENG HUA

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31	C11	Chip C	471 500V±10% 1206 X7R	1	YAGEO/FENG HUA
32	U1	IC	0B2283K SOP-623	1	On Bright
33	U2	IC	CJ434±0.5% SOT-23	1	Changdian/UTC
34	FI	FUSE	5TE T3.15A/250V	1	CX/SUNNY/Little fuse
35	R6	FUSE	0.56 Ω±1% 2W	1	RUISHI/Sanlian
36	CX1	X Cap	0.22uF 275V±20% P=10mm	1	YAGEO/FENG HUA
37	LF1	Inductance	330uH MIN	1	BOHONGDA/VS/NH
38	LF2	Inductance	9mH MIN	1	BOHONGDA/VS/NH
39	CY1	Y cap	Y1 102 400V±10% P=10mm Y5P	1	STE/HJ
40	TR	Transformer	TRRM8-120300A	1	NH/ JZ
41	PH1	Photo	BPC-817MB DIP-4 P=10.2	1	Baihong
42			EL-817MB DIP-4 P=10.2		Everlight
43	Q1	MOSFEET	HF10N65 650V 10A TO-220F	1	HF
44		MOSFEET	MDF10N60TH 600V 10A TO-220F		Toshiba
45	Q1,D4	Screw	Φ3*8	2	Yunzhan/jixin
46	Q1,D4	Nut	Φ3.0	2	Yunzhan/jixin
47	D4	Schottky Diode	SR3060LCT 30A 60V TO-220AB	1	JF
48		Schottky Diode	SBL30L60CTH 30A 60V TO-220AB		QM/JH
49	D4	Silicon gel sheeting	3*19*0.25mm	1	YF/Guanghuitian
50	C1	E cap	68uF 400V±20% 105℃ Φ18*20mm(WH)	1	Aishi
51	C3	E cap	4.7uF 50V±20% 105℃2000H Φ5*11mm(RR)	1	Aishi
52	C8	E cap	1000uF 16V±20% 105℃2000H Φ8*16mm(RR)	1	Aishi
53	C9	E cap	470uF 16V±20% 105℃ Φ8*12mm( PZ)	1	Aishi
54	Q1	Heat Sink	SINK-120300T1	1	XZ
55	D4	Heat Sink	SINK-120300T2	1	XZ
56	L,N	Lead wire	1015 24AWG 55mm	2	RUNFA
57	TR	Thermal conductive silicon film	12*20*2mm	1	YF/Guanghuitian

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58	Insulating strip	36*24*0.25mm	1	YHX
59	Twin adhesive	Φ10*40mm	1	TB
60	DC Cable	Φ2.1*5.5*9.5 2464 18AWG 1500mm BLK	1	YTX/RUNFA Yonhap
61	Case	C01-A BLK	1	XF/JLF
62	Case	C01-B BLK	1	XF/JLF
64	Nameplate	NAP-120300C5-PSE	1	YHX
65	PE bag	215*135*4.0C	1	JC
66	Out carton	430*440*220mm	0.0125	XinRuicheng
67	partition	435*418*3mm	0.0125	XinRuicheng
68	plastic tray	430*425*55mm	0.05	FuXing
69	Bond	AP-688	0.5	JX
70	Solder Bar	1Cu 99Sn	0.4	YUNNANTIN
71	Solder wire	0.3Ag 0.7Cu 99Sn	0.2	YUNNANTIN

批准 Approval:	ZL	审核 Check:	ZL	制表 Execution:	BMD
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