

产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP18042701/A1

客户 Customer	AKON	核准 Approval	
品名 Product	开关电源 Switching power supply	品管确认 QC	
型号 Model	AD-F050P200	审核 Check	
日期 Date	2025-08-14	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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Industrial Zone

产品规格承认书 SPECIFICATION				文件编号 File No.	UME-EG-SP18042701/A1
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目录 INDEX

1	变更履历 Revision History.....	1-3
2	概述 Summary	2-4
3	技术要求 Technical requirements.....	3-4
	3.1 安全标准 Safety Standards.....	3-4
	3.2 Input	3-4
	3.3 Output.....	3-4
	3.4 可靠性及质量控制 Reliability and Quality Control.....	3-5
	【Electrical Test Items】	3-5
	3.6 测试线路图 Test Circuit	3-9
4	线路图 Schematic Diagram	4-9
5	电路板图 P.C.B.....	5-10
6	外观示意图 Mechanical Drawing (单位 unit: mm 颜色 color: BK)	6-11
7	铭板标识 Label.....	7-12
8	包装方式 Packaging	8-12
9	材料清单 BOM.....	8-12

*** 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【JET6108-61010-1011】

3.2 Input

Rated Input Voltage	100-240Vac
Operating Range	90-264Vac
Rated Input Frequency	50~60Hz
Rated Input Current	0.3A
Maximum Input Power	14W
Input Power (No Load)	0.1W Max
Primary Current Protection	Over current protection: Current fuse

3.3 Output

Rated Dc Output Voltage	5.5V Max	No load
	5.0V ± 5%	Load
Rated Load Current	2000mA	
过流保护 Over Current Protection	The power supply will be protection when output power over 100% ~ 150% of all rated DC output.	
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	78.7% minimum @ input 115AC/230VAC to meet DOE6	
DC Plug		
Matching cable	USB cable, L:1000mm 22AWG	

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3.4 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 (100VAC/240VAC)	Less than 250 μ A
2	ESD Test 1. Test is conducted at room temperature/humidity.(25°C, RH 50-60%) 2. Test set is 150pF/150 Ω . 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).
	ESD Test (Ability test) 1. Test is conducted at room temperature/humidity.(25°C, RH 50-60%) 2. Test condition: 150pF/150 Ω . 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)	No destruction
3	Hi-POT test Condition=AC3000V, 1min. Test place=Between AC blade and DC plug Sensitivity current=10mA	No malfunction. (damage, arc, breakdown etc)
4	Insulation resistance DC500V, 1min. Between AC blade and DC plug	More than 100M Ω
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°C in 1 hour).	Housing surface Temperature rise is less than 45K.

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品名 Product	开关电源 SPS	型号 Model	AD-F050P200	日期 Date	2025-08-14

		1. Apply rating input voltage(100VAC/240VAC), 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 (for US) EN55032 (For Japan)
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	Temperature range	Electrical performance guarantees temperature range: 0°C to 40°C Electrical performance not guarantees working temperature range: -20°C to 50°C Storage temperature range: -30°C to 80°C	No abnormal appearance, mechanic performance or electric performance
2	High Temperature Leave	1. Temperature 80°C 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	Low Temperature Leave	1. Temperature -30°C for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 1(hour), then evaluate.	
4	High Temperature Humidity	1. Temperature 50°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.	
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.	

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品名 Product	开关电源 SPS	型号 Model	AD-F050P200	日期 Date	2025-08-14

7	Heat/humidity Cycle Test	A, C, D : RH=90 ± 10% B : RH= 90 ± 5% E : No limit After 5cycles, put EUT at room temperature/humidity condition	
<p>The graph shows a temperature cycle starting at room temperature (室温 or +20°C). Phase A (2h) ramps up to +70°C. Phase B (4h) is constant at +70°C. Phase C (2h) ramps down to +45°C. Phase D (12h) is constant at +45°C. Phase E (1h) ramps down to -20°C. After a 2h dwell at -20°C, it ramps back to room temperature (+20°C) over 1h.</p>			
8	Humidity	Operation is 10~85%. Storages is 5~95%	Non-condensing

【Mechanical Test Items】

Item	Conditions	Criteria
1	Drop Test	No parts remove, no abnormal mechanic performance, (outside scratches are acceptable)
2	Height of drop: 1m, 1times/each surface (total 6 times), Floor: Hardwood.	
3	Package Drop Test	
4	1. Packaged condition. 2. Drop test points (1) 1 corner (2) 2 edges (3) 4 surfaces, Total: 7times drop test. 3. Height of drop:50cm. Bottom surface drop test only apply 65cm.	
5	1. AC Plug in/out test more than 5000times 2.10(times/min). 1 time is in/out action.	
6	Unit Vibration Test	A character do not disappear.
7	Package Vibration	
8	1.Vibration condition: 5-55-5Hz/2min. (1)Top/Bottom direction : 12.5(m/S ²)30(min) (2) Right/left direction : 7.5(m/S ²)15(min)*2	Don't take the label off the main body
9	AC Plug in/out Test (AC Blade part)	
10	Exfoliate with cellophane tape and examine it	Use Nichiban 18mm or 24mm width
11	The reliability to face each other to come off	
12	① -40°C ② 80°C ③ 50°C 90% Each 96 hours ④ ③ After, it is a thermal shock examination	

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	the label	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

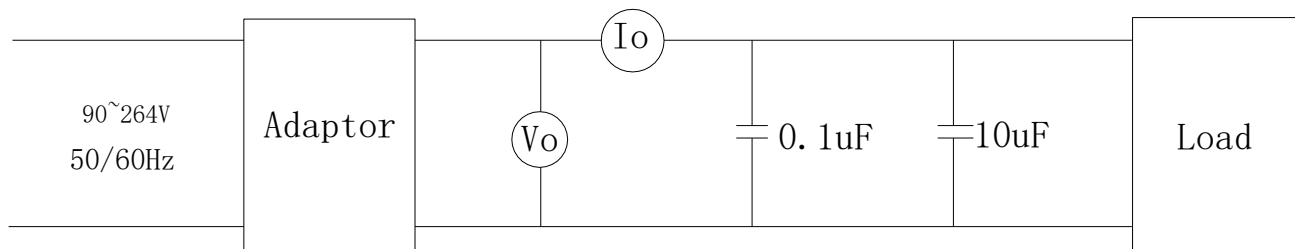
【Safety Test Items】

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

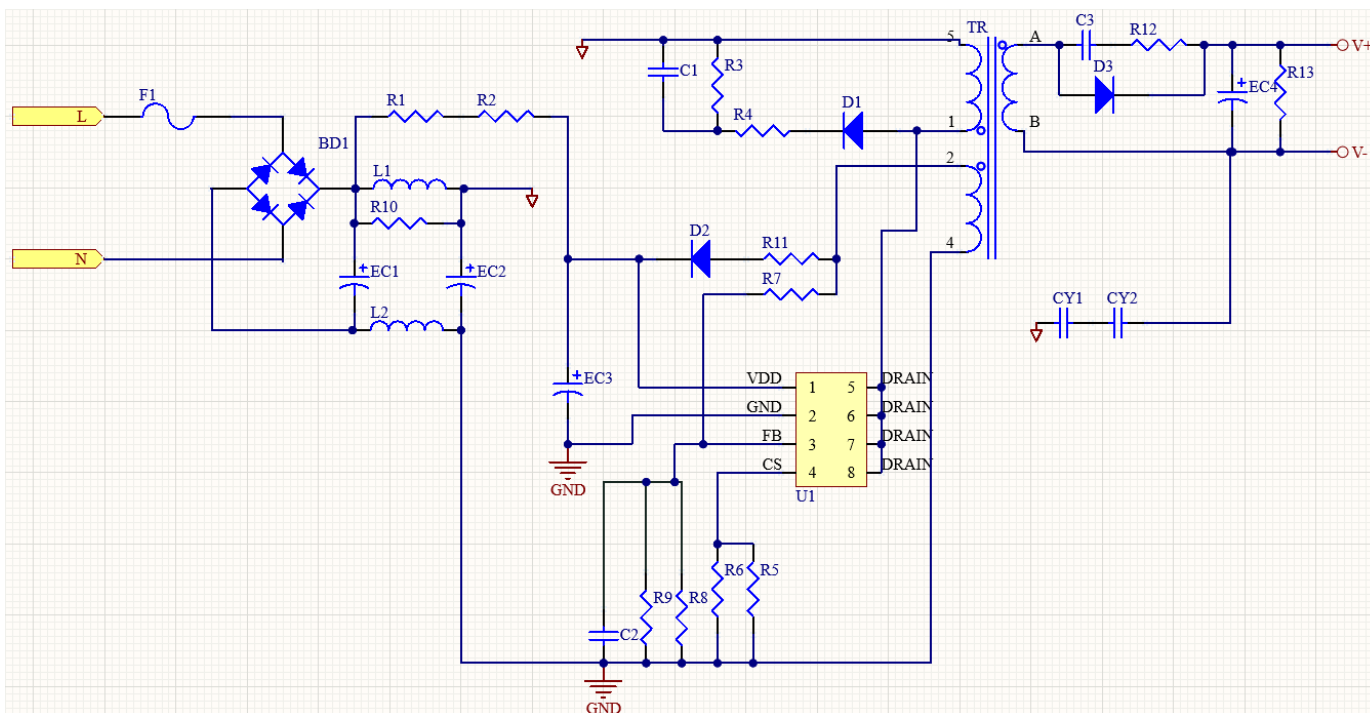
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品名 Product	开关电源 SPS	型号 Model	AD-F050P200	日期 Date	2025-08-14

3.6 测试线路图 Test Circuit



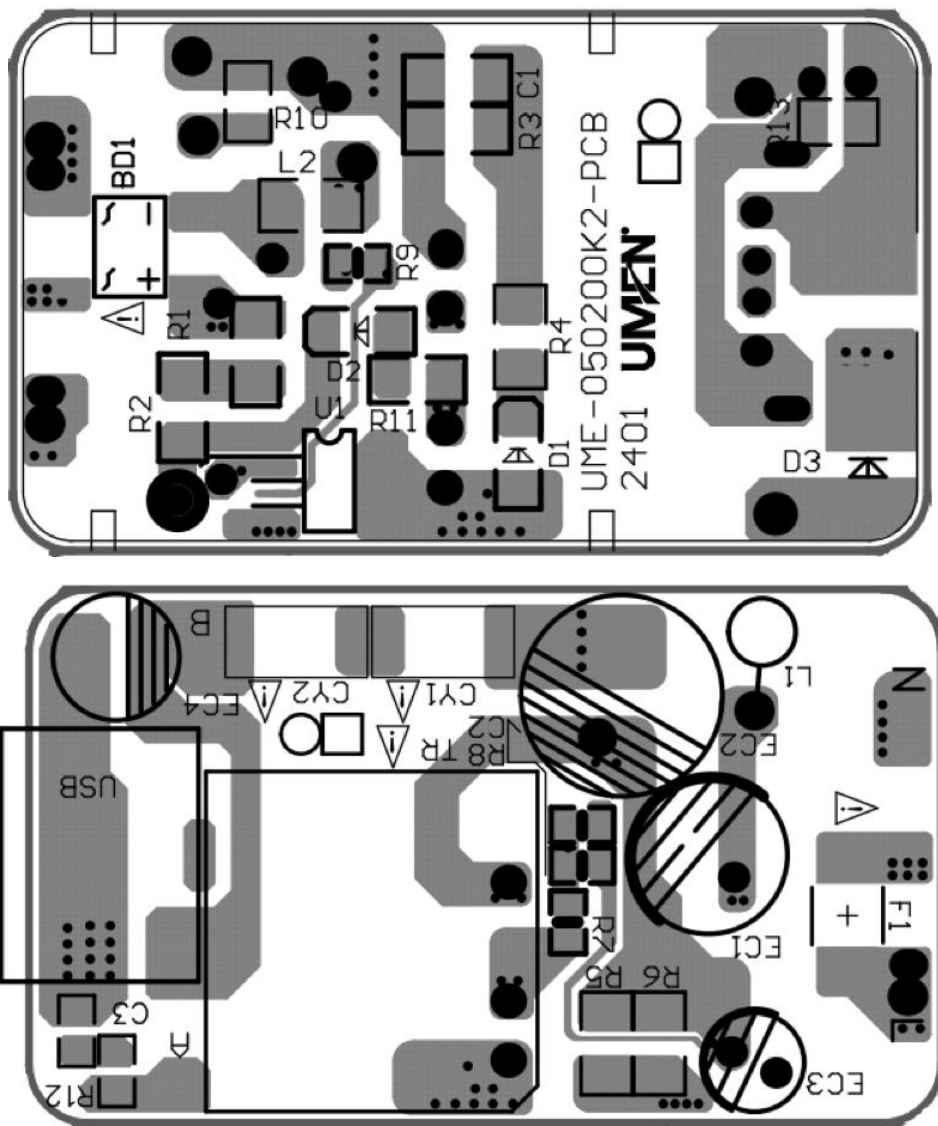
4 线路图 Schematic Diagram



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品名 Product	开关电源 SPS	型号 Model	AD-F050P200	日期 Date	2025-08-14

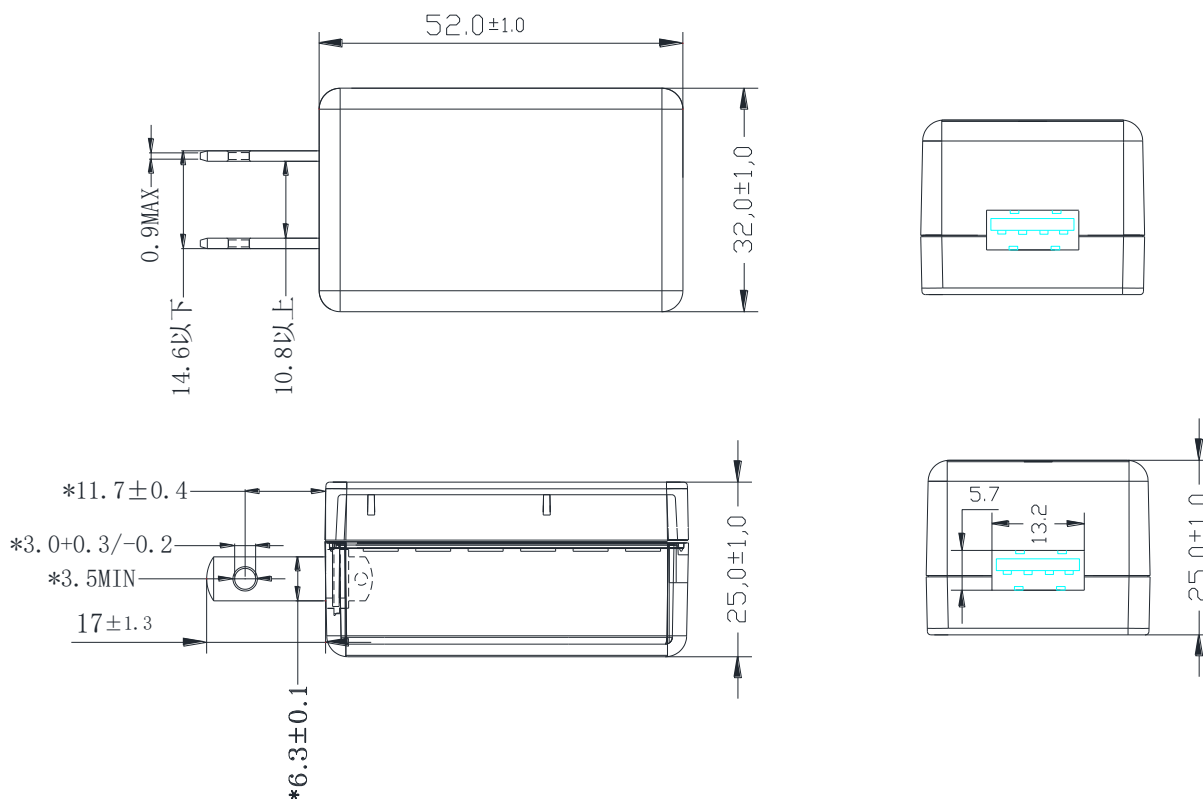
5 电路板图 P.C.B



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品名 Product	开关电源 SPS	型号 Model	AD-F050P200	日期 Date	2025-08-14

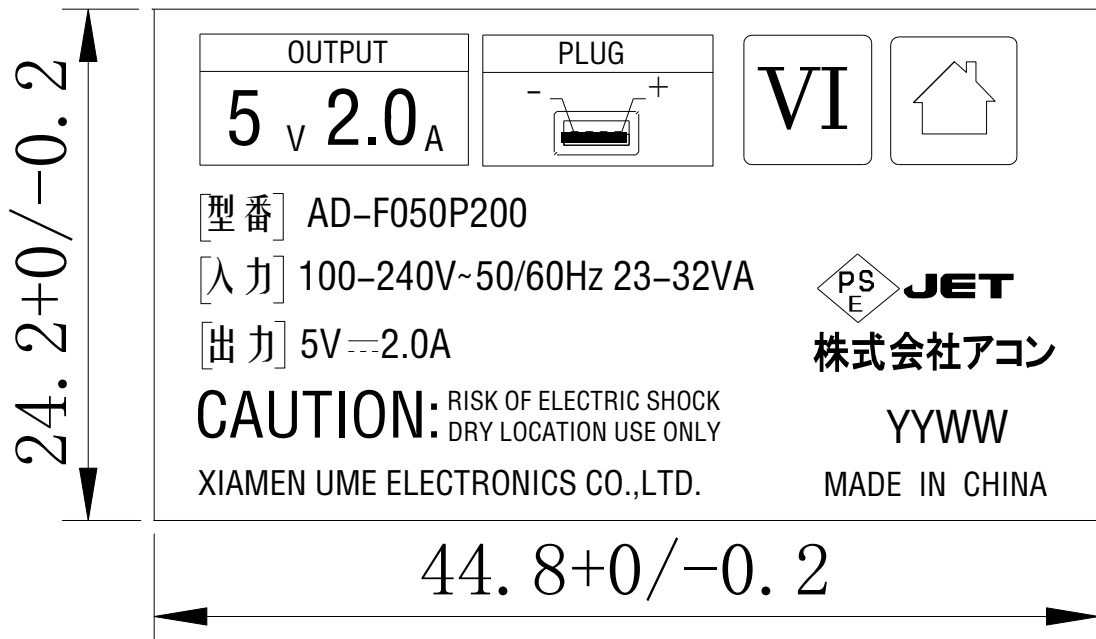
6 外观示意图 Mechanical Drawing (单位 unit: mm 颜色 color: BK)



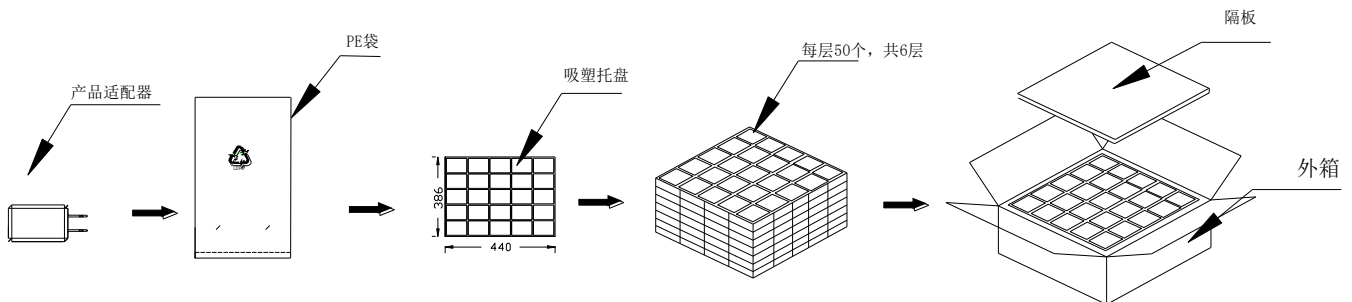
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7 铭板标识 Label



8 包装方式 Packaging



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9 BOM list

NO.	ITEM	DESCRIPTION	SPECIFICATION	QTY	MANUFACTURER
1	PCB	PCB	UME-050200K2-PCB	1	TengShengXing
2	L2	CHIP L	10uH±10% 1206	1	Taiqing/Fenghua
3	R1,R2	CHIP R	1.5MΩ±5% 1206	2	YAGEO/FENG HUA
4	R3	CHIP R	300KΩ±5% 1206	1	YAGEO/FENG HUA
5	R4	CHIP R	100Ω±5% 1206	1	YAGEO/FENG HUA
6	R5,R6	CHIP R	2Ω±1% 1206	2	YAGEO/FENG HUA
7	R7	CHIP R	27KΩ±1% 0603	1	YAGEO/FENG HUA
8	R8	CHIP R	6.2KΩ±1% 0603	1	YAGEO/FENG HUA
9	R9	CHIP R	150KΩ±5% 0603	1	YAGEO/FENG HUA
10	R10	CHIP R	4.7KΩ±5% 0805	1	YAGEO/FENG HUA
11	R11	CHIP R	2.2Ω±5% 0805	1	YAGEO/FENG HUA
12	R12	CHIP R	47Ω±5% 0603	1	YAGEO/FENG HUA
13	R13	CHIP R	1KΩ±5% 0805	1	YAGEO/FENG HUA
14	C1	CHIP C	471 500V±10% 1206 X7R	1	YAGEO/FENG HUA
15	C2	CHIP C	22PF 50V 0603 COG	1	YAGEO/FENG HUA
16	C3	CHIP C	471 50V±10% 0603 X7R	1	YAGEO/FENG HUA
17	D1	CHIP D	A7 1A/1000V/SOD-123	1	JF/XH
18	D2	CHIP D	A7 1A/1000V/SOD-123FL	1	JF/XH
19	D3	CHIP D	SBR10E45 10A 45V TO-277 SMD	1	DIODES
			SP10U45L 10A 45V TO-277 SMD		JH
20	BD1	Bridge Diode	ABS8 800V 1A	1	JF/XH/World
21	U1	IC	OB2573Y SO-8	1	OB
22	L1	Inductor	0512-470uH±10% 150mA	1	HXH/CHSH/ZY
23	CY1,CY2	Y cap	SMD Y2 TBY2222MF 300VAC	2	STE/HJ/TRX
24	F1	Fuse	DESC 24T 1A 250VAC	1	XC/SET/Little fuse
25	USB	USB	USB AF90	1	Yuanchuan
26	TR1	TRANSFORMOR	TREE16-050200S2	1	HXH/CXY/UME

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27	EC1	E cap	10uF 400V±20% 105℃ Φ8*12mm(WH)	1	AISHI
28	EC2	E cap	10uF 400V±20% 105℃ Φ10*13mm (WH)	1	AISHI
29	EC3	E cap	4.7uF 50V±20% 105 Φ5*11mm(RR)	1	AISHI
30	EC4	E cap	1000uF 6.3V±20% 105 Φ6.3*10mm(PZ)	1	AISHI
31	L1	Tube	5mm 125℃(UL)	15	RUISHI/Sanlian
32	CASE	CASE	B02(USB)-A BK	1	JLF/YGE
33	CASE	CASE	B02(USB)-B BK	1	JLF/YGE
34	L,N	Connector	14.2*2.4*0.3mm CONT-01	2	Xiezhun
35	BLD	Blade	BLD-011(BK) PSE	1	GuanQiao
36	NAP	NAP	NAP-050200C-PSE	1	Yihangxin
37		PE bag	150*100*4.0C	1	Jicheng
38		CARTON	455*396*180mm	0.0033	XinRuicheng/ FuXing
39		LINER	455*380*3mm	0.0033	XinRuicheng/ FuXing
40		Blisters	440*386*30mm	0.02	YUXIANG
41		White glue	AP-688	1.0	JX
42		Solder Bar	0.3Ag 0.7Cu 99Sn	0.1	Yun Nan Tin
43		Solder wire	1Cu 99Sn	0.3	Yun Nan Tin

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