

产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP25102901/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-AKC050P200	审核 Check	ZL
日期 Date	2025-10-29	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.

电话 Tel: 0592-2611448

地址：厦门市翔安区莲亭路火炬八方工业园10号楼882-7号8楼

Add: 8th Floor, No. 882-7, Lianting Road, Xiamen Torch Hi-Tech Zone (Xiangan)
Industrial Zone

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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: 电安法别表第八【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 ± 10%	Load
Rated Load Current	2000mA	
过流保护 Over Current Protection	110%-150% @Vin=90Vac-264Vac	
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	TYPEC	
Matching cable	22AWG UL2464 L = 1500mm, BK, Lead-free soldering	

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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 $^{\circ}$ 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 1. Test is conducted at room temperature/humidity.(25 $^{\circ}$ C, RH 50-60%) 2. Test set is 150pF/150 Ω . 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 $^{\circ}$ 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)	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 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 $^{\circ}$ C in 1 hour).	Housing surface Temperature rise is less than 45K.

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		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 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	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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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	
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	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 examine it	A character do not disappear.	
7	The reliability to face each other to come off	① -40℃ ② 80℃ ③ 50℃ 90% Each 96 hours ④ ③ After, it is a thermal shock examination	Don't take the label off the main body

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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

【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 49N(5Kgf) force 3. Time: 1min.	No abnormality such as wire cut, bushing come off
2	DC Cord Bending Test (adaptor side / plug side) Weight = 2.45N(250g) Angle = +/-60° Cycles in every minute = 40times/min. Test cycles = 1000times Note: contrarotate 60°, and then rotate it clockwise with 90°(+60°~-60°) , and at last return to origin. (1 Cycle : 0°⇒-60°⇒0°⇒+60°⇒0°)	Operate properly.

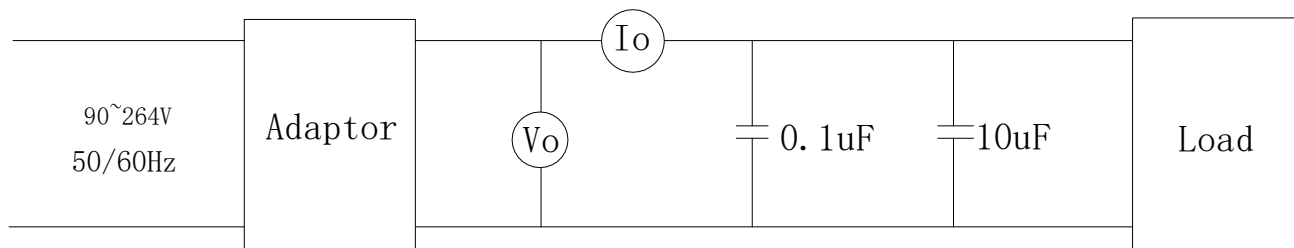
【Safety Test Items】

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

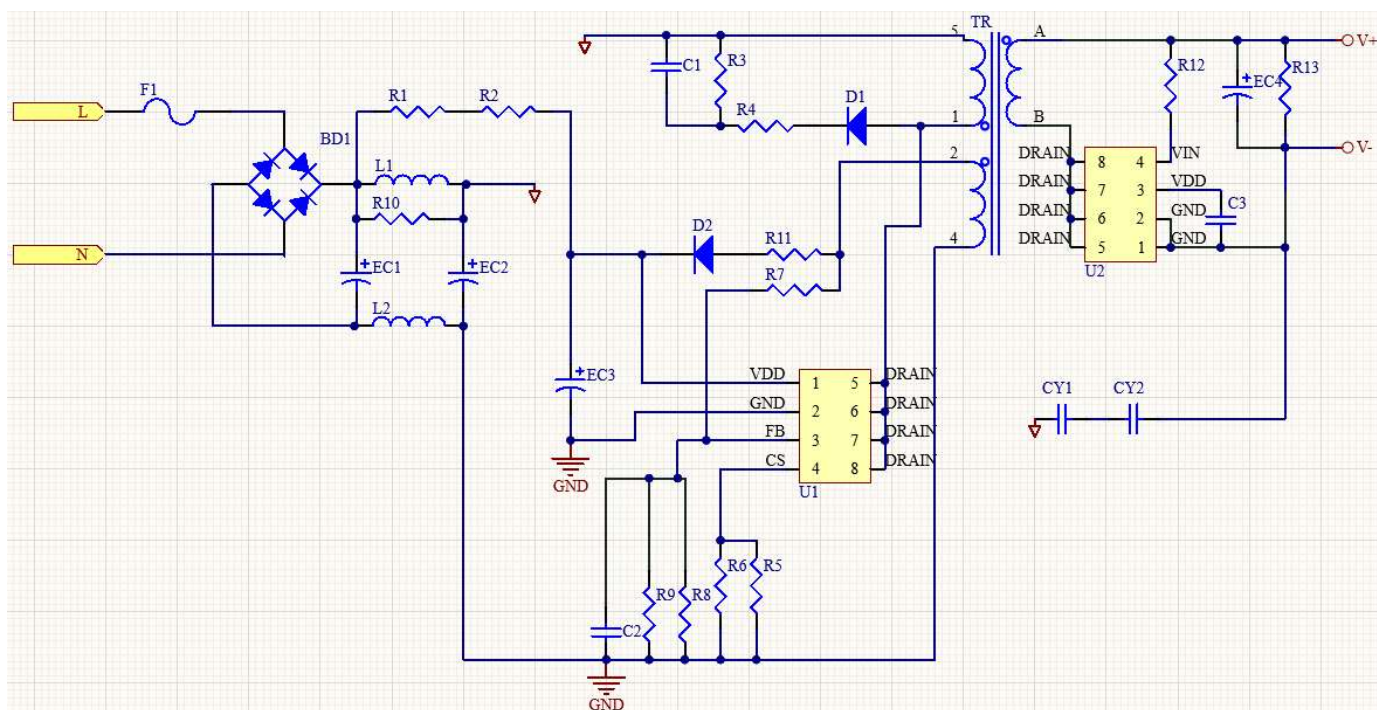
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3.6 测试线路图 Test Circuit



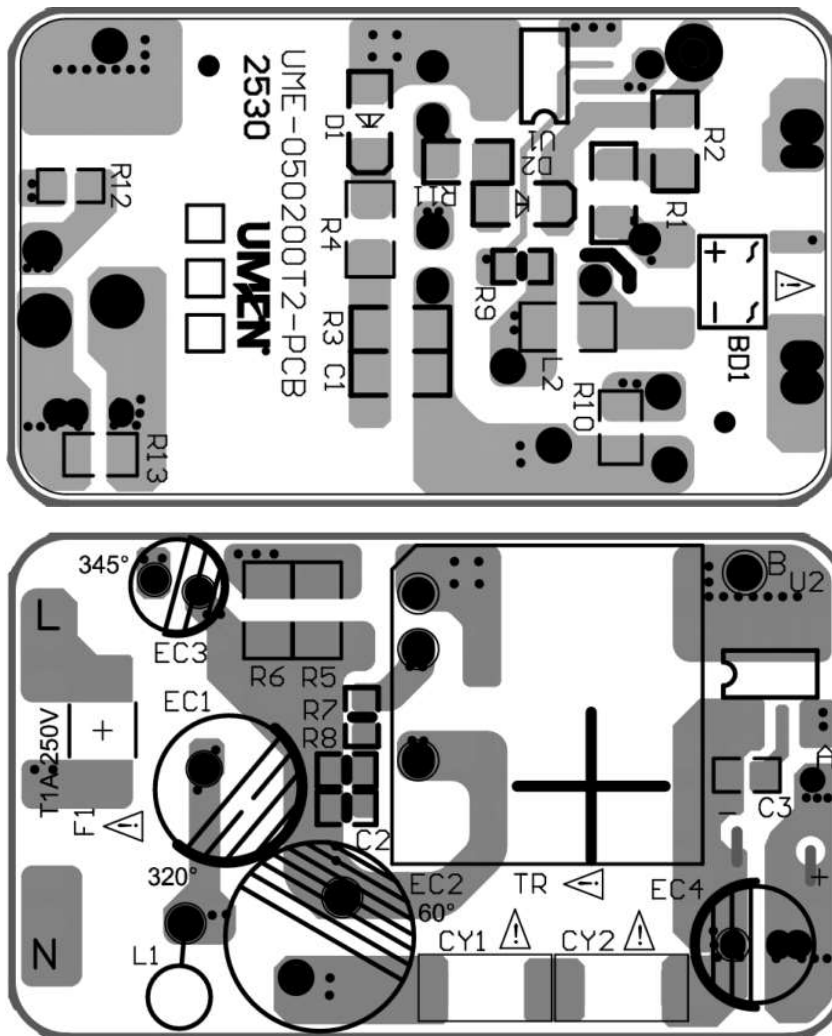
4 线路图 Schematic Diagram



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5 电路板图 P.C.B



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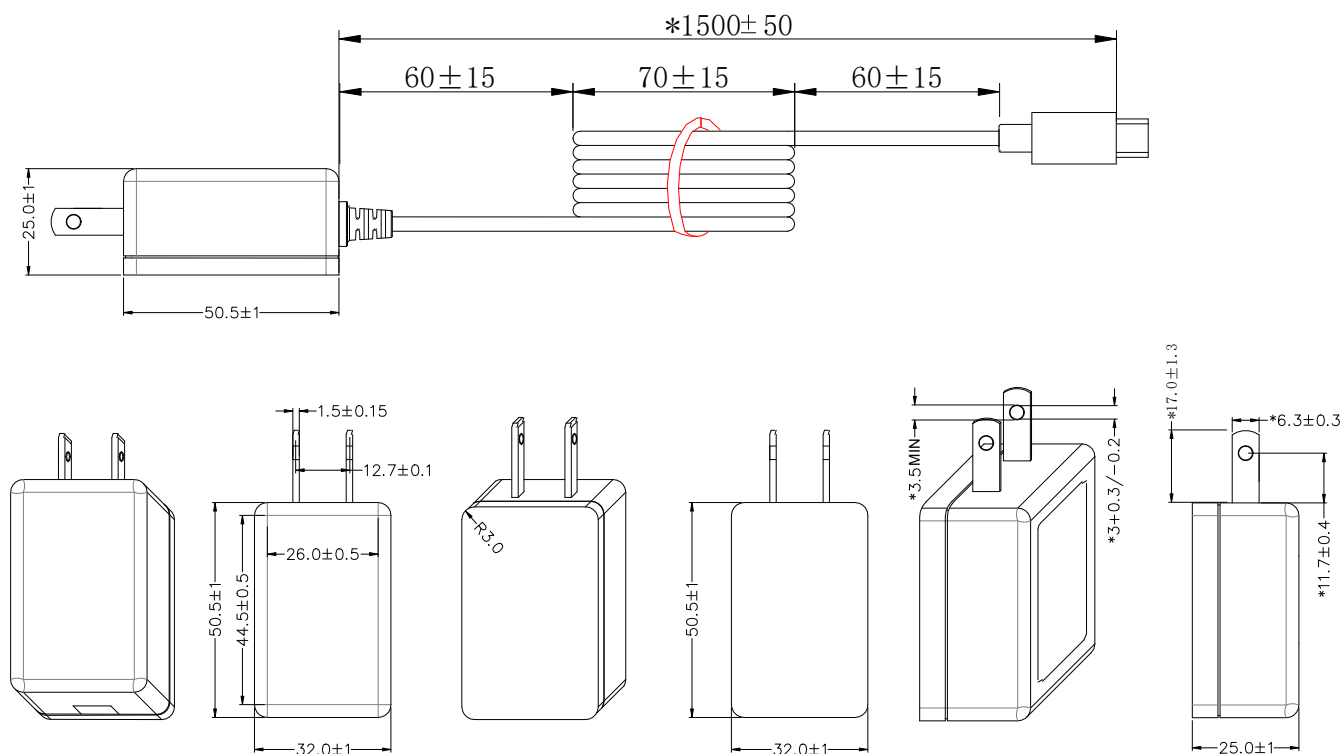
6 Cord (单位 unit: mm 颜色 color: BK)

							版本	变更内容	日期																																																																																																																													
<p>Type-C</p>																																																																																																																																						
<p>可靠性要求:</p> <ol style="list-style-type: none"> 1: 连接器盐雾试验要求: 常温35°, 盐水浓度5%, 喷雾24h不生锈, 无氧化现象。 2: 插拔力试验: 以12.5mm/min的速度, Type c插入力5~20N, 拔出8~20N 3: 抗拉测试: 固点距离300MM吊重3KG, 静拉1分钟, 线缆机械电气功能正常。 4: 摇摆测试: 吊重250g, 40次/分钟, 左右60度, 往返120度为一次, 1000次以上。 <p>技术要求:</p> <ol style="list-style-type: none"> 1、100%通过导通测试, 无短路、断路、接触不良等现象。 2、绝缘电阻: DC 300V 10MΩ ±D. 1S. 3、本产品所用物料符合ROHS环保标准。 																																																																																																																																						
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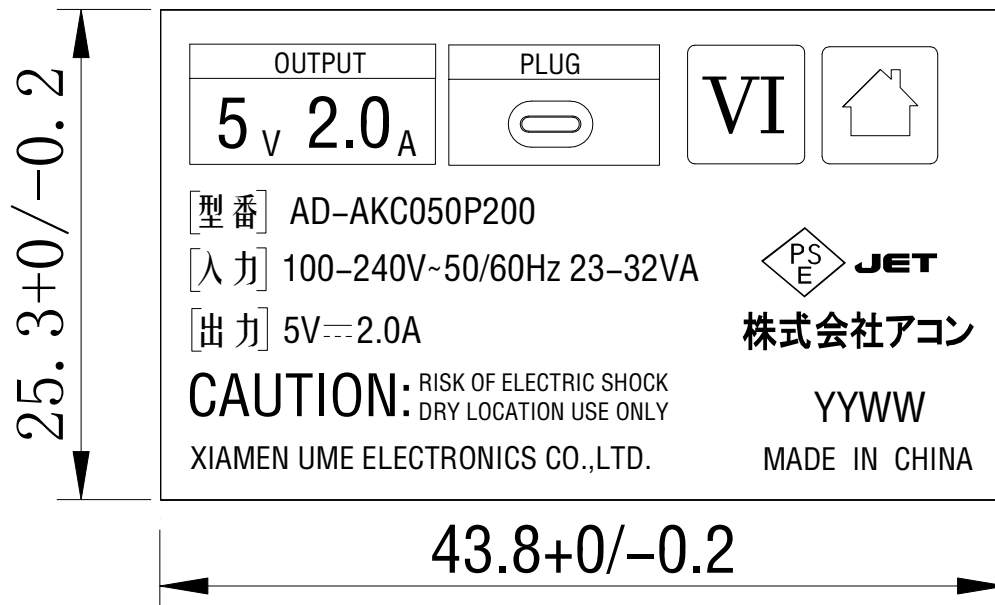
7 外观示意图 Mechanical Drawing (单位 unit: mm 颜色 color: BK)



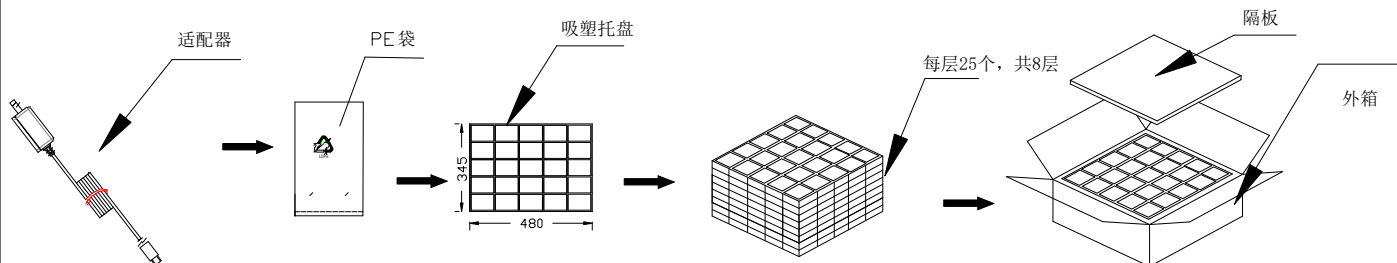
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8 铭板标识 Label



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10 BOM list

NO.	ITEM	DESCRIPTION	SPECIFICATION	QTY	MANUF ACTURER
1	PCB	PCB	UME-050200T2-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	7.5KΩ±1% 0603	1	YAGEO/FENG HUA
9	R9	CHIP R	36KΩ±1% 0603	1	YAGEO/FENG HUA
10	R10	CHIP R	4.7KΩ±5% 0805	1	YAGEO/FENG HUA
11	R11	CHIP R	4.7Ω±5% 0805	1	YAGEO/FENG HUA
12	R12	CHIP R	22Ω±5% 0603	1	YAGEO/FENG HUA
13	R13	CHIP R	1.5KΩ±5% 0805	1	YAGEO/FENG HUA
14	C1	CHIP R	471 500V±10% 1206 X7R	1	YAGEO/FENG HUA
15	C2	CHIP R	22PF 50V 0603 COG	1	YAGEO/FENG HUA
16	C3	CHIP C	105 16V±10% 0603 X7R	1	YAGEO/FENG HUA
17	D1,D2	CHIP D	A7 1A/1000V/SOD-123	2	JF/XH
20	BD1	Bridge Diode	ABS8 800V 1A	1	JF/XH
21	U1	IC	OB2573Y SO-8	1	OB
22	U2	IC	OB2005ZKCPA-G SO-8	1	OB
23	CY1,CY2	Y cap	SMD Y2 TBY2222MF 300VAC	2	TRX
24	F1	Fuse	DESC 24T 1A 250VAC	1	FYS
25	L1	Inductor	0512-470UH±10%	1	HXH/CHSH/ZY
26	TR1	TRANSFMOR	TR-050200S3	1	HXH/ ZY
27	EC1	E cap	10uF 400V±20%	1	AISHI
28	EC2	E cap	10uF 400V±20%	1	AISHI
29	EC3	E cap	4.7uF 50V±20%	1	AISHI

批准 Approval:	ZL	审核 Check:	ZL	制表 Execution:	BMD
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产品规格承认书 SPECIFICATION				文件编号 File No.	UME-EG-SP25102901/A1
品名 Product	开关电源 SPS	型号 Model	AD-AKC050P200	日期 Date	2025-10-29

30	EC4	E cap	1000uF 6.3V±20% (PZ)	1	AISHI
31	L1	Tube	5mm 125℃(UL)	15	RUISHI/Sanlian
32	CASE	CASE	B02-A BK	1	JLF/XH
33	CASE	CASE	B02-B BK	1	JLF/XH
34	DC cord	Cable	22AWG L:1500mm 2464 BK	1	DPK/GC
35	L,N	Connector	14.2*2.4*0.3mm CONT-01	2	Xiezhun
36	BLD	Blade	BLD-011(BK) PSE	1	XF
37		PE bag	150*100*4.0C	1	Jicheng
38		CARTON	490*356*240mm	0.005	XHX
39		LINER	485*350*3mm	0.005	XHX
40		Blisters	480*345*30mm	0.04	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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