

产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP16102001/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-F120P500	审核 Check	ZL
日期 Date	2025-07-30	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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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: 電安法別表第八 **【JET6108-61010-1021】**

3.2 Input

Rated Input Voltage	100-240Vac
Operating Range	90-264Vac
Rated Input Frequency	50~60Hz
Rated Input Current	1.2A
Maximum Input Power	75W
Input Power (No Load)	0.21W Max
Primary Current Protection	Current fuse
AC Blade	PSE type AC Blade
AC Cable	<PS>E 2*0.75mm ² VCTFK L = 1800mm, Black, Lead-free soldering

3.3 Output

Rated output voltage	12V ±5%
Rated Load Current	5000mA
Over Current Protection	6.0A 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	88% minimum @ input 115AC/230VAC to meet DOE6
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 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 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).
	1. Test is conducted at room temperature/humidity.(25°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°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°C in 1 hour). 1. Apply rating input voltage(100/240V),	Housing surface Temperature rise is less than 45K.
		Housing surface Temperature rise is less than 15K.

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		2.No Load 3.Measure the surface temperature of the adaptor	
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.	
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	

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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. Don't take the label off the main body
7	The reliability to face each other to come off the label	
8	No tally part step	less than 0.25mm after an environmental examination

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【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.

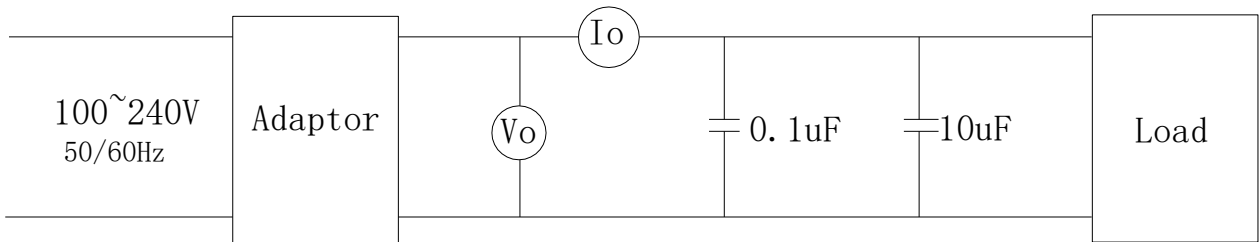
【Safety Test Items】

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

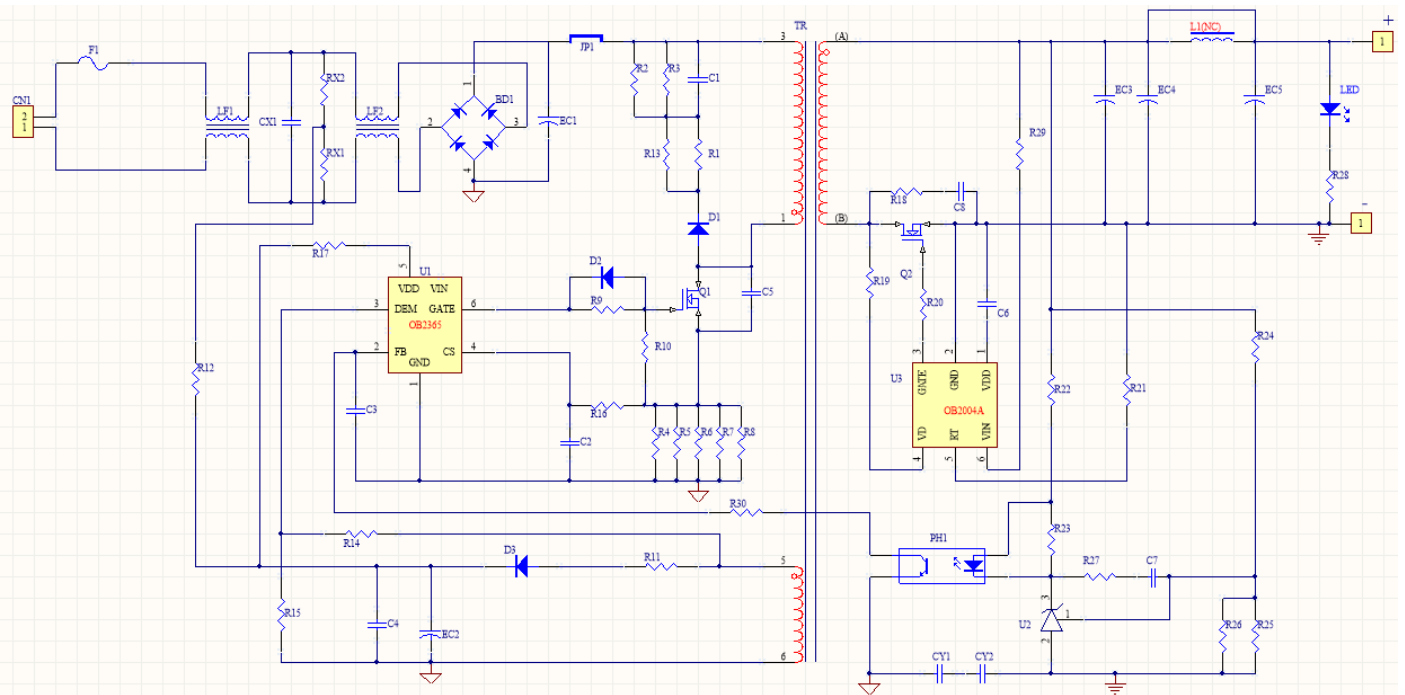
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3.5 测试线路图 Test Circuit



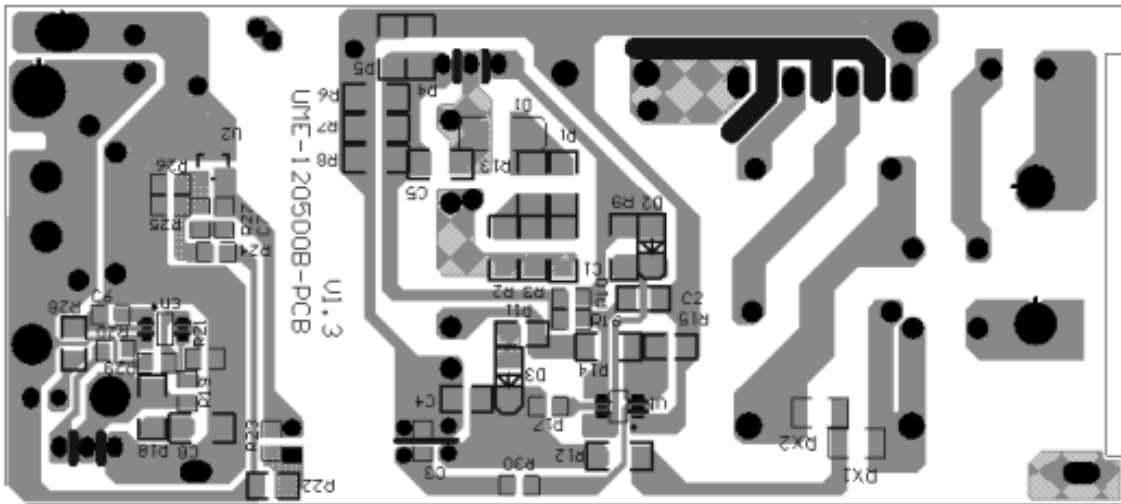
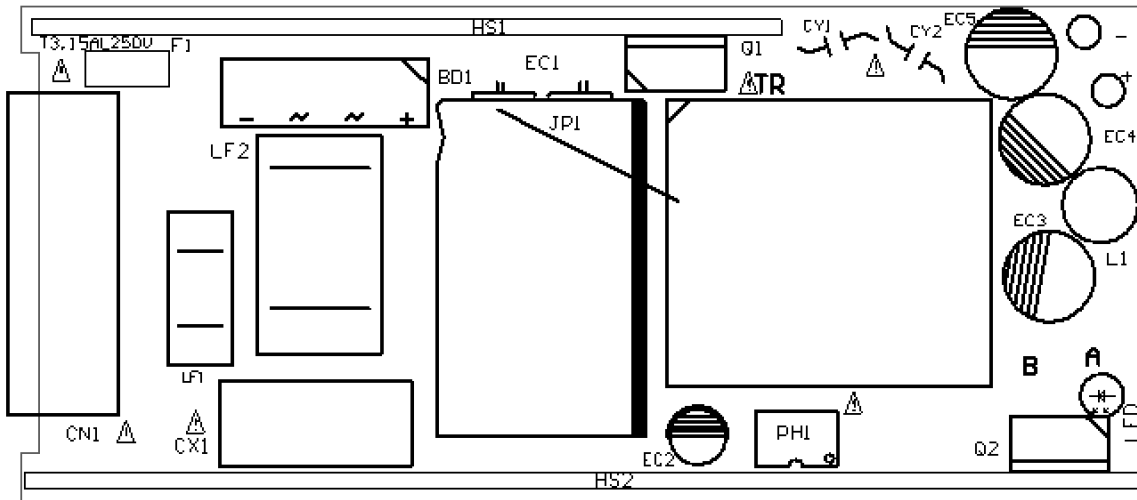
4 线路图 Schematic Diagram



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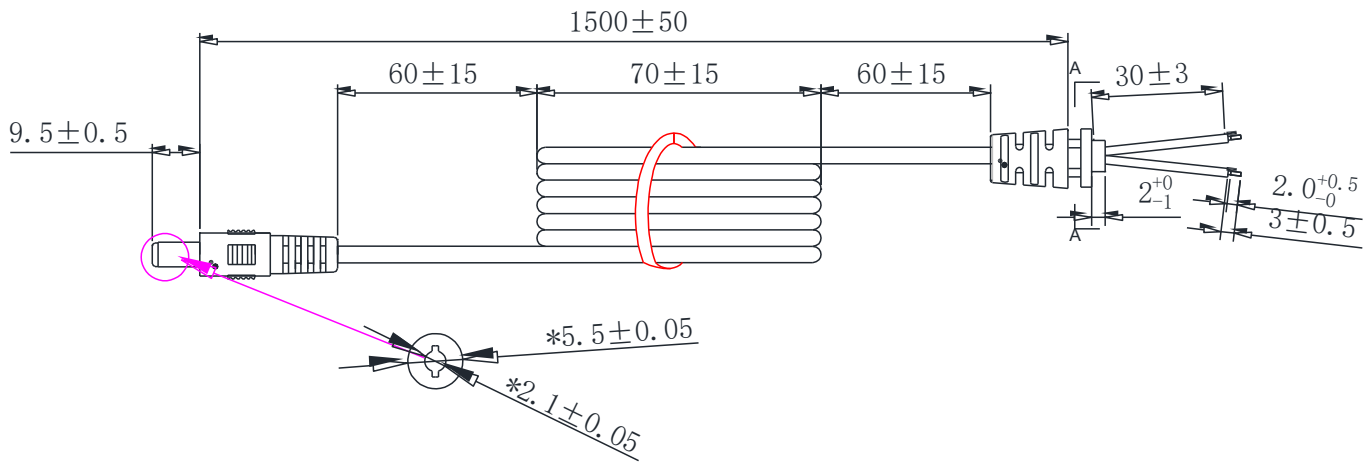
5 电路板图 P.C.B



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



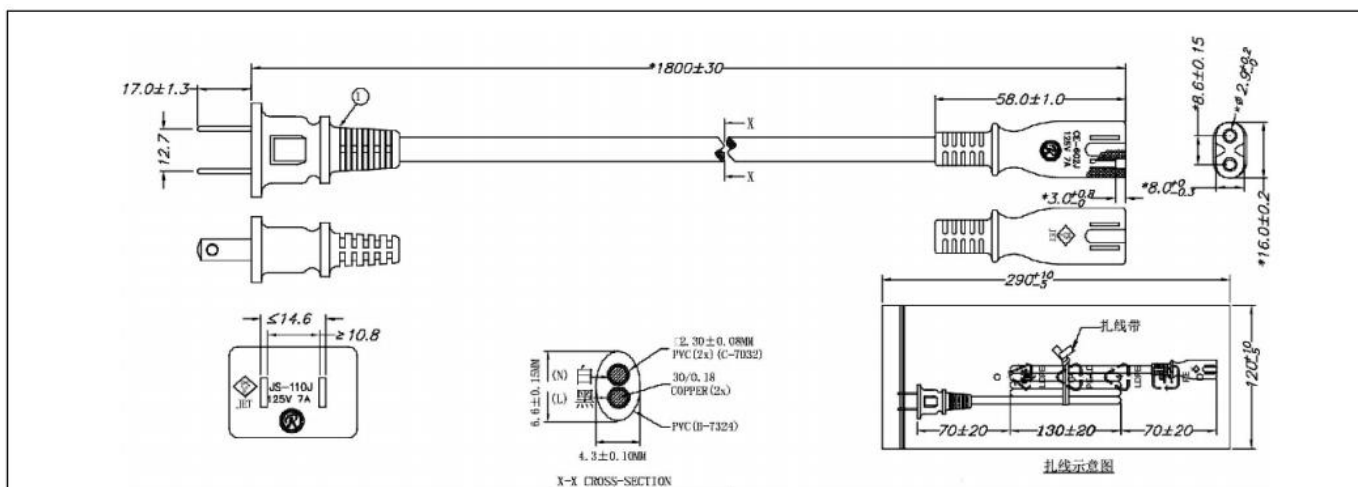
备注:

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3mm+1/-0。剥线要求如图所示, 剥丝线焊锡的直径为1.5mm 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*7.8mm。
3. SR拉力测试: 吊重1Kg/10分钟, 不可有位移, 吊重5Kg/1分钟, 位移2mmMAX
4. 插拔力测试: 插入力2KgfMAX, 拔出力0.3KgfMIN; 插拔6000MIN次不允许有电气和机械性能的损坏, 且满足拔出力0.1KgMIN;
5. 摇摆测试: 吊重500g, 以40次/分作90°往返, 每一往返为一次, 至少1000次;
6. PLUG绝缘阻抗测试: 100MΩMIN在500DC/分; PLUG接触阻抗测试: 100mΩMAX;
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 AC CORD 图



备注:

- 1、线材规格: VCTFK 0.75/2C BLK L:1800mm
- 2、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。
- 3、摇摆测试: 吊重500g, 以40次/分作60°往返, 每一往返为一次, 至少2000次。
- 4、插头、线及接口符合PSE(日本)标准。
- 5、材质符合“RoHS”要求。
- 6、测试参数: 内高压3KV, 时间1S, 外高压4KV, 时间为2S, 绝缘 5MQmin, 时间1S 漏电流0.5mA。
- 7、头部: JS-110J 尾部: CE-602J
- 8、插拔力: 10N-50N
- 9、印字内容: R31945 RoHS <PS>E JET VCTFK 2*0.75mm² (30/0.18mm) 300V FUND RESOURCES ELECTRIC INDUSTRY CO., LTD SHANGHANG YEAR

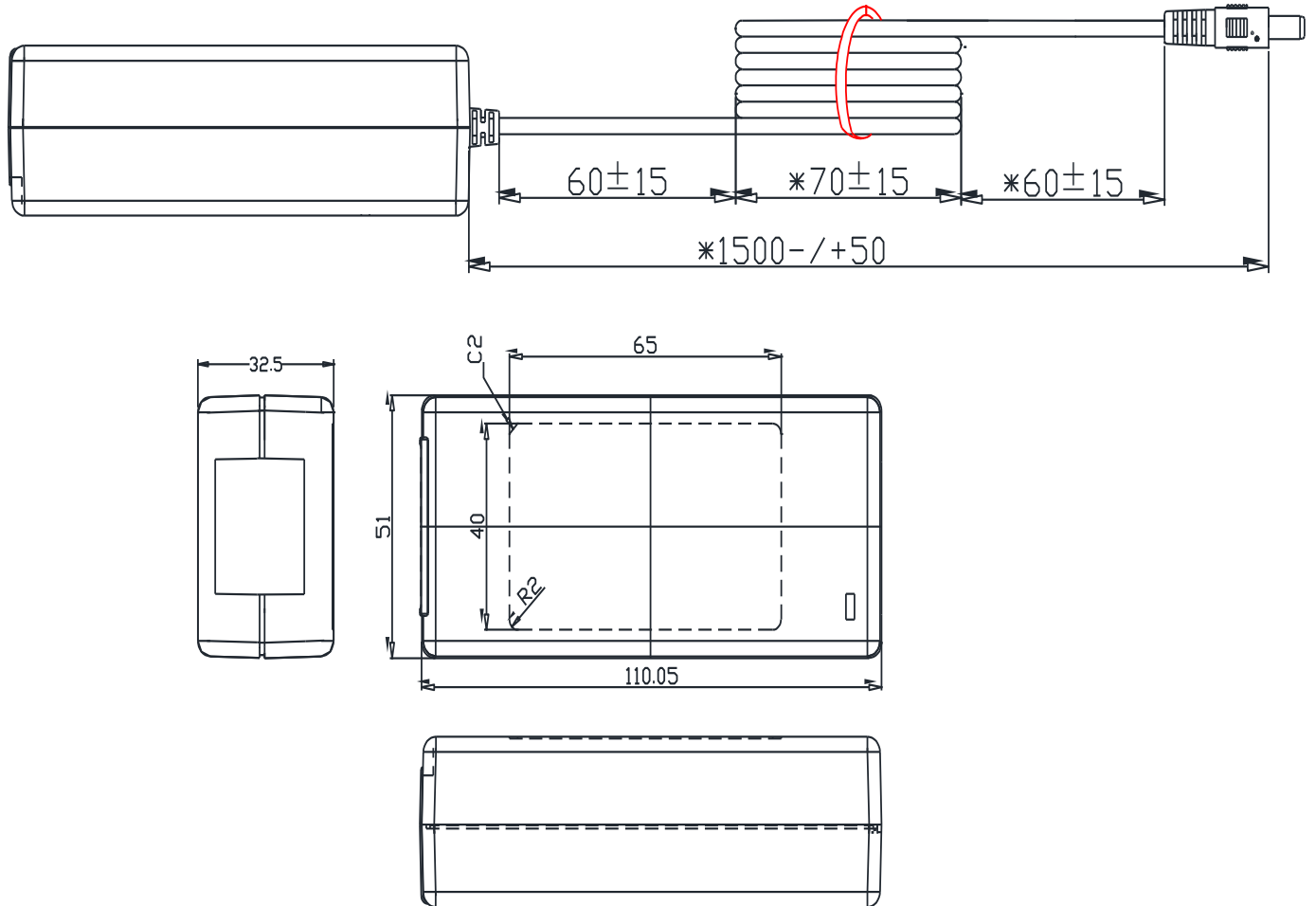
厦 门 友 盟 电 子 有 限 公 司

版次	变更内容	制图	审核	批准	单位	mm	图 称	输入电源线	
		白美端			比例	2021-9-25	图 号	CORD-120500M	版本
			日期		编 号		LJDY0120017	1.0	
					产 品 型 号		SW-120500T9		

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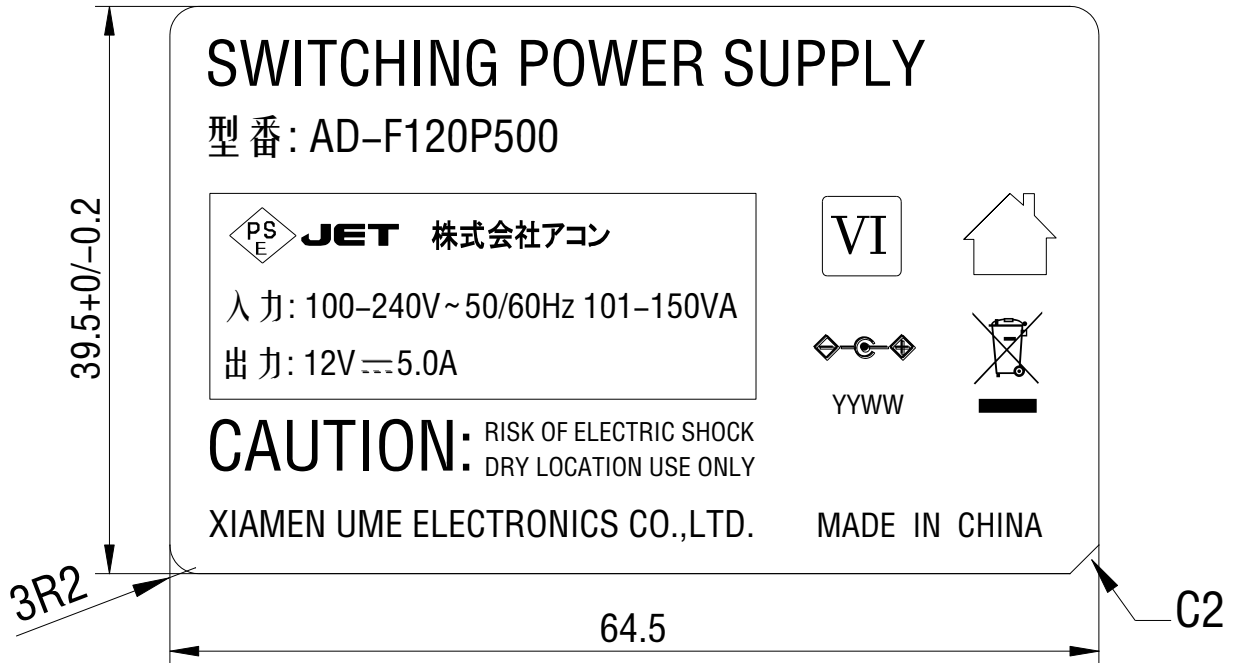
8 外观示意图 Cord and Mechanical Drawing (单位 unit: mm 颜色 color: Black)



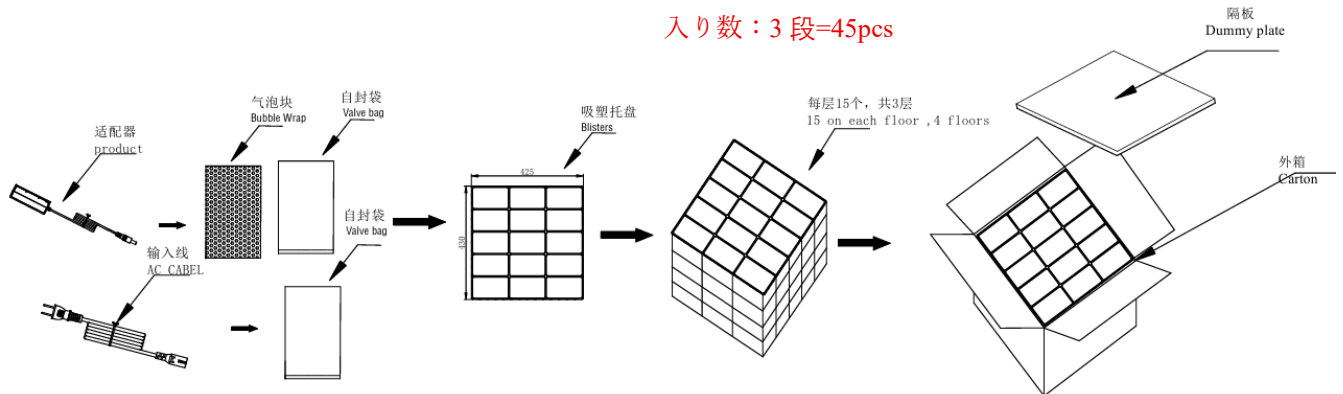
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9 铭板标识 Label



10 包装方式 Packaging



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11 材料清单 BOM

NO	ITEM	DESCRIPTION	SPECIFICATION	QTY	MANUF ACTURER
1	PCB	PCB	UME-120500B-PCB	1	TXS/JT/MW/HG
2	RX1,RX2	Chip R	1M Ω ±5% 1206	2	YAGEO/FengHua
3	R1,R13	Chip R	180 Ω ±5% 1206	2	YAGEO/FengHua
4	R2,R3	Chip R	510K Ω ±5% 1206	2	YAGEO/FengHua
5	R4,R5,R6,R7	Dip R	1.5 Ω ±1% 1206	4	YAGEO/FengHua
6	R8	Dip R	2.0 Ω ±1% 1206	1	YAGEO/FengHua
7	R9	Dip R	150 Ω ±5% 1206	1	YAGEO/FengHua
8	R10,R28	Chip R	10K Ω ±5% 0805	2	YAGEO/FengHua
9	R11	Chip R	6.8 Ω ±5% 0805	1	YAGEO/FengHua
10	R12,R14	Chip R	100K Ω ±5% 1206	2	YAGEO/FengHua
11	R15	Chip R	27K Ω ±5% 0805	1	YAGEO/FengHua
12	R16	Chip R	470 Ω ±5% 0805	1	YAGEO/FengHua
13	R17,R29	Chip R	0 Ω ±5% 0805	2	YAGEO/FengHua
14	R18	Chip R	22 Ω ±5% 1206	1	YAGEO/FengHua
15	R19	Chip R	56 Ω ±5% 1206	1	YAGEO/FengHua
16	R20	Chip R	22 Ω ±5% 0805	1	YAGEO/FengHua
17	R21	Chip R	30K Ω ±5% 0805	1	YAGEO/FengHua
18	R22,R23	Chip R	1K Ω ±5% 0805	2	YAGEO/FengHua
19	R24	Chip R	20K Ω ±1% 0805	1	YAGEO/FengHua
20	R25	Chip R	10K Ω ±1% 0805	1	YAGEO/FengHua
21	R26	Chip C	10.5K Ω ±1% 0805	1	YAGEO/FENG HUA
22	R27	Chip C	1K Ω ±5% 0805	1	YAGEO/FENG HUA
23	R30	Chip C	47 Ω ±5% 0805	1	YAGEO/FENG HUA
24	C1,C8	Chip C	102 500V±10% 1206 X7R	2	YAGEO/FENG HUA
25		Chip C	102 630V±10% 1206 X7R		YAGEO/FENG HUA

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26	C2	Chip C	100PF 50V 0805 COG	1	YAGEO/FENG HUA
27	C3	Chip C	222 50V±10% 0805 X7R	1	YAGEO/FENG HUA
28	C4	Chip C	104 50V±10% 0805 X7R	1	YAGEO/FENG HUA
29	C6	Chip C	105 16V±10% 0805 X7R	1	YAGEO/FENG HUA
30	C7	Chip C	684 50V±10% 0805 X7R	1	YAGEO/FENG HUA
31	U1	IC	OB2365EMP SOP-23	1	On Bright
32	U2	IC	CJ431±0.5% SOT-23	1	Changdian/UTC
33	U3	IC	OB2004 DMP SOT-23	1	On Bright
34	D1	Diode	M7 SMA	1	JF/MIC/PANJIT
35	D2	Diode	RLS245 200V 0.2A LL-34	1	JF/MIC/PANJIT
36	D3	Diode	F7 1A/1000V/SOD-123FL	1	JF/MIC/PANJIT
37	Q2	MOSFEET	KS8203CA 93A 75V TO-220	1	GUANYU
38	BD2	Rectifier Bridge	KBL406G 600V 4A P=5mm	1	XH/JF/PANJIT
39	LED	LED	3Ø LED Green	1	Hong Qi
40	F1	FUSE	*T3.15A/250V	1	XC
		FUSE	*T3.15A/250V TSP		FYS
41	HS2	Mike pull tape	150mm*73mm*0.05mm	1	YAHUA
42	HS1	Heat Sink	70*20*2+33*30*2	1	Weiersi/LILIFA
43	HS2	Heat Sink	101*21*2	1	Weiersi/LILIFA
45	Q2	Insulation sheet	BUSHING-T0-220	1	GHT
46	Q2	Silicon Sheet	13*19*0.25 mm	1	GHT
47	Q1,Q2	Screw	Φ3*8	2	Yunzhan/jixin
48	Q1,Q2	Nut	Φ3mm	2	Yunzhan/jixin
49	CX1	X Cap	0.33uF 250V±20% P=15	1	STE
50	LF1	Inductance	0.6mH MIN 0.5 UEW+TLW	1	VS/NH
51	LF2	Inductance	20mH MIN 0.5 UEW+TLW	1	VS/NH
52	CN1	AC INLET	ST-A03-005KT10(N)2.0	1	Chenli/BEJ

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53	CY1,CY2	Y cap	Y2 472 250V±20% P=7.5	2	STE/HJ
54	TR	TRANSFORMER	TRPQ2620-120500B	1	HXH/ ZY
55	PH1	Photo	EL-817MB DIP-4 P=10.2	1	Everlight
			BPC-817MB DIP-4 P=10.2		Bright Led
56	Q1	MOSFEET	MDF10N60TH 600V 10A TO-220F	1	Magnachip/Toshiba
		MOSFEET	HF10N65 650V 10A TO-220F		HF/JF
57	EC1	E cap	120uF 400V±20% 105℃ Φ18*30mm(BXW)	1	Rubycon
58	EC2	E cap	10uF 50V±20% 105℃ Φ5*11mm(YXF)	1	Rubycon
59	EC3,EC5	E cap	560uF 16V±20% 105℃ Φ8*11mm(PZ)	2	AISHI
60	EC4	E cap	1000uF 16V±20% 105℃ Φ8*20mm(ZLH)	1	Rubycon
61	JP1	Jump line	Φ0.5mm	25	UME
62	CASE	Thermal film	70*45*2mm	1	GAOKU
63	TR	Thermal film	15*25*3mm	1	GAOKU
64		Light Pipe	4.52*2.01*2.5+Φ6*Φ4.52 d=9.04mm	1	JinTonZhou
65		DC Cable 1	"I" type Φ2.1*5.5*9.5 18AWG 2464 L:1500mm BK	1	DPK/GC
66		AC Cable	<PS>E 2*0.75 mm ² VCTFK L=1800mm Black, Lead-free soldering	1	KLG/JR
67		Case	UME 6005A BK	1	JLF/YGE
68		Case	UME 6005B BK	1	JLF/YGE
69		Bubble Wrap	195*115	1	Xincheng
70		Valve bag	140*210*0.05mm	1	Xincheng
71		Valve bag	95*155*0.05mm	1	Xincheng
72		CARTON	470*380*195mm	0.0222	XinRuicheng/ FuXing
73		LINER	465*365*3mm	0.0222	XinRuicheng/ FuXing
74		Blisters	460*370*65mm	0.06667	YUXIANG
75		White glue	AP-688	1.2	JX
76		Solder Bar	Pb free	0.4	YUNNANXIYE
77		Solder wire	Pb free	0.2	YUNNANXIYE

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