



产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP16010301/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-A33P200	审核 Check	Zengliang
日期 Date	2016-04-01	拟制 Execution	JB

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

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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.

2.2 Name division table

MODEL NO.	DESIGN NO.	PLUG
AD-A33P200	SW-033200A	0.7*2.35*8.0

3 技术要求 Technical requirements

3.1 安全标准 Safety Standards

Japan: 電安法/UL60950/CE

3.2 Input

Rated Input Voltage	100-240Vac
Operating Range	90-264Vac
Rated Input Frequency	50/60Hz
Rated Input Current	0.2A
Input Power (No Load)	0.1W Max@Ip:100Vac; 0.1W Max@Ip:240Vac
Primary Current Protection	Over current protection: Fuse resistor

3.3 Output

Rated Dc Output Voltage	3.6V Max	No Load
	2000mA Min	Load 3.1V
Over Current Protection	2500mA Max @ Vin=100Vac/240Vac	
Line Regulation	The line regulation is less than $\pm 2\%$ while measuring at rated load and $\pm 5\%$ of input voltage changing.	
Ripple	$\leq 200\text{mVp-p}$	
Switching Efficiency	70.26% minimum @ input 115AC/230VAC, meet ENERGY	
DC Cord	20AWG UL2464 L = 1500mm, Black	

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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 $^{\circ}$ 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).
	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	Electric strength Condition=AC3000V, 1min. Test place=Between AC blade and DC plug Sensitivity current=5mA	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 35K.
	1.Apply rating input voltage(100/240V),	Housing surface

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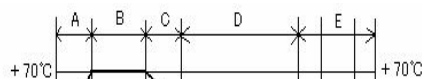
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		2.No Load 3.Measure the surface temperature of the adaptor	Temperature rise is less than 15K.
6	Input over / under	Apply voltage=(rating input voltage)x(1±30%) Impressed time : 24h	No destruction
7	EMI/Conducted Emission	Telephone stand by mode with rapid-charge condition	Conform to: FCC 47CFR Part 15 Class B /EN55022

【Environmental Test Items】

Item	Conditions	Criteria
1 Temperature range	Electrical performance guarantees temperature range: 0°C to 40°C Storage temperature range: -30°C to 80°C	
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 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.	
5 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.	
6 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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【Mechanical Test Items】

Item		Conditions	Criteria
1	Drop Test	Height of drop: 1m, 2times/each surface (total 12 times), Floor: concrete.	No parts remove, no abnormal mechanic performance, (outside scratches are acceptable)
2	Package Drop Test	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.	
3	Unit Vibration Test	1. Vibration condition:33.3Hz/min. 20.6m/s ² 2. (1)Top/Bottom direction:4-hours (2)Right/Left direction:2-hours (3) Front/Back direction:2-hours	
4	Package Vibration	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	
5	AC Plug in/out Test (AC Blade part)	1. AC Plug in/out test more than 5000times 2.10(times/min). 1 time is in/out action.	
6	Exfoliate with cellophane tape and examine it	Use Nichiban 18mm or 24mm width	A character do not disappear.
7	Alcohol Examination-resistant	Weight : 500g Test cycles=100times	
8	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	Don't take the label off the main body
9	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
10	Appearance fault	Mode Bali short a bullet hole / a scratch / a sunspot / a white dot / an alien substance / a stain / a mustache / Weld flow mark gate trace / a crack / whitening	A few thing: It determines a limit if necessary. A reference standard: The deep wound 0.2mm ² following, the shallow wound 0.3mm ² following
11	Option carton packing	There is "Railway assurance mark" ① -40℃ ②80℃ ③50℃ 90%, each 96Hr ④③ After, it is thermal shock examination -20℃ ← → 50℃ 96 cycles float screens few thing	

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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 49N(5Kgf) force 3. Time: 1min.	No abnormality such as wire cut, bushing come off
2	DC Cord Bending Test(adaptor side / plug side)	Withstanding weight 4.9N(500gf) at 40 times per minute with angle of 90°.	Specimen bend not less than 2,000 times
3	PLUG PULLING TEST:	The DC PLUG is fixed, and is pulled to the vertical direction by the cable with 50.0N(5.1kgf) for 1 minutes.	No abnormal cosmetic damage or no bad performance.

【Safety Test Items】

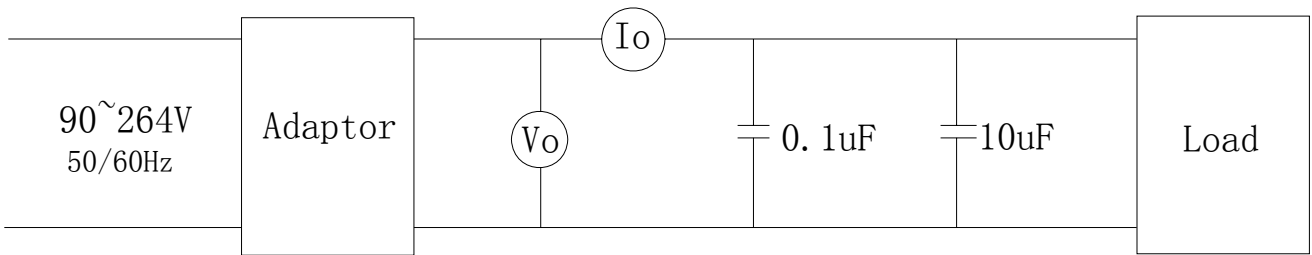
1	MTBF	Make a measurement condition, a calculation standard clear	More than 50,000 hours
2	Part materials	It is maintenance or the incombustibility of contact / part materials approaching it in an outer fence, the charge department of the electric part	same as UL94V-0; more than it
3	print board	Incombustibility	same as UL94V-0; more than it
4	Solder debris	We regulate solder debris less than 0.4mm 1. Soldering debris between 0.1mm shall be removed if at all possible. 2. Soldering debris between 0.1 to less than 0.4 mm, in case some soldering debris/wasters are in 5cm ² area. We total up their size and total less than 0.4mm shall be regarded as regulation.	
5	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
6	Appearance fault	Mode Bali short a bullet hole / a scratch / a sunspot / a white dot / an alien substance / a stain / a mustache / Weld flow mark gate trace / a crack / whitening	A few thing: It determines a limit if necessary. A reference standard : The deep wound 0.2mm ² following, the shallow wound 0.3mm ² following.

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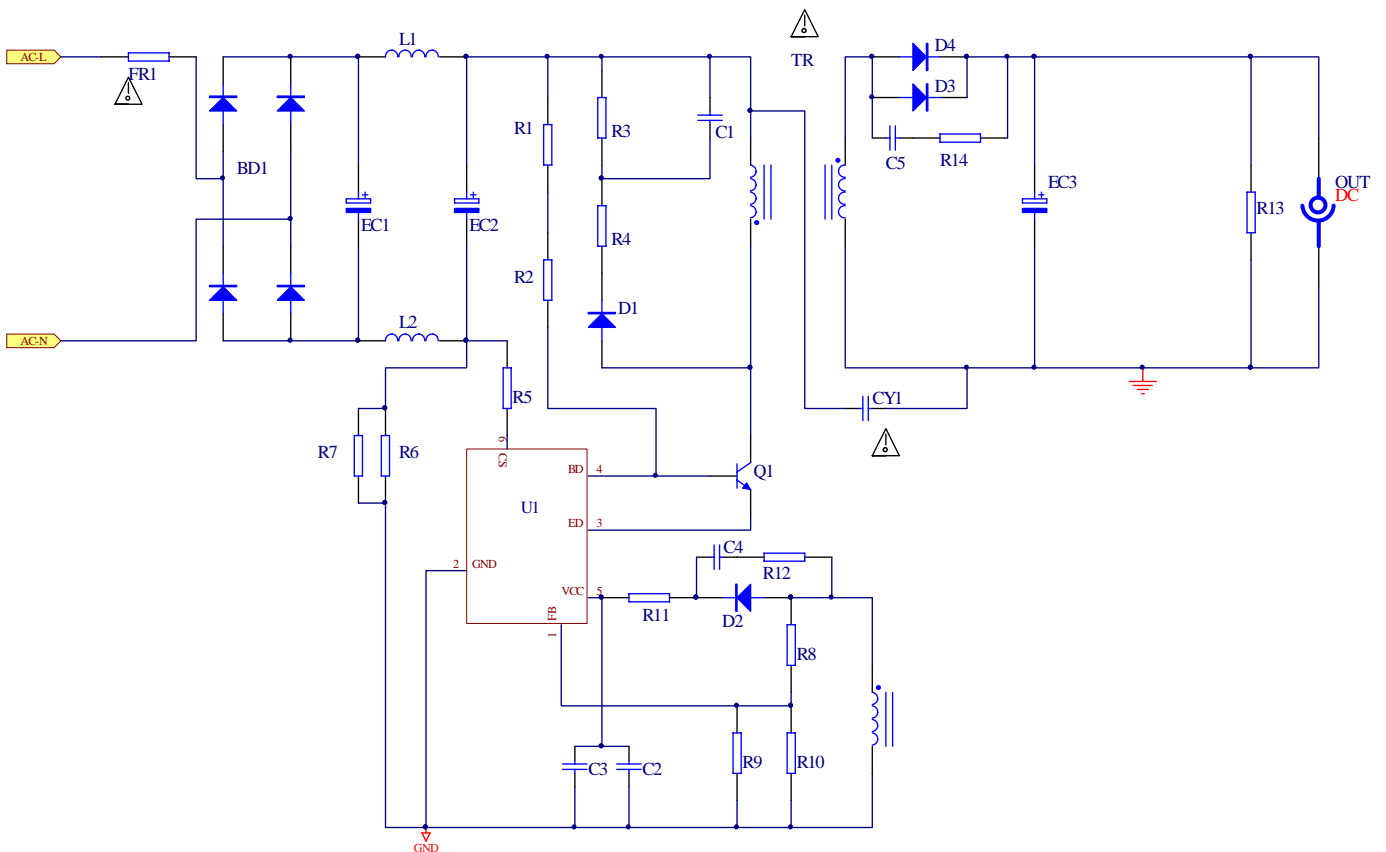


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3.5 测试线路图 Test Circuit



4 线路图 Schematic Diagram

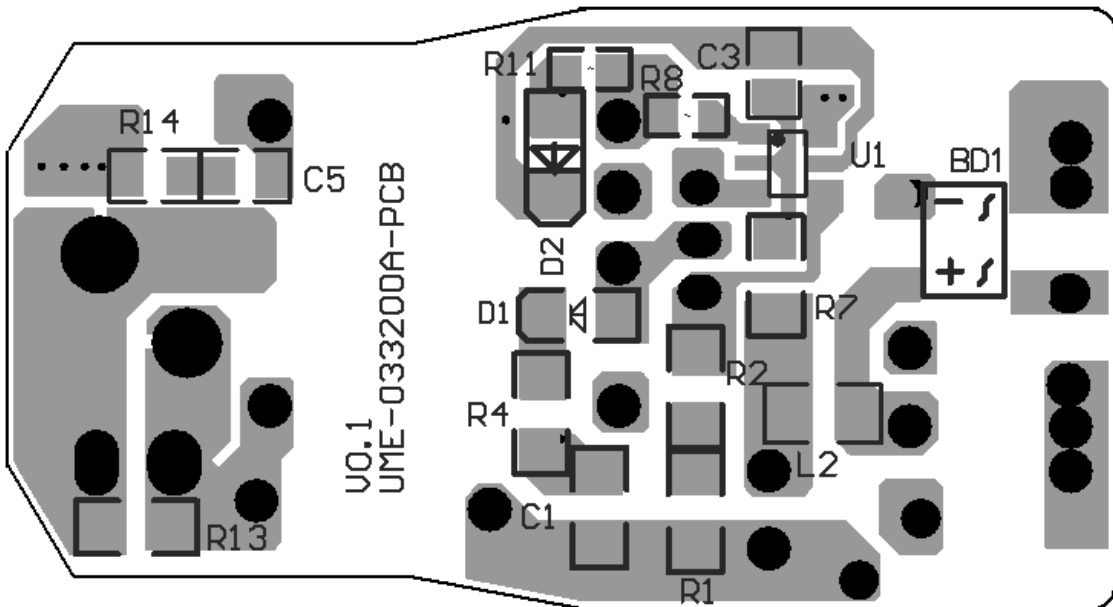
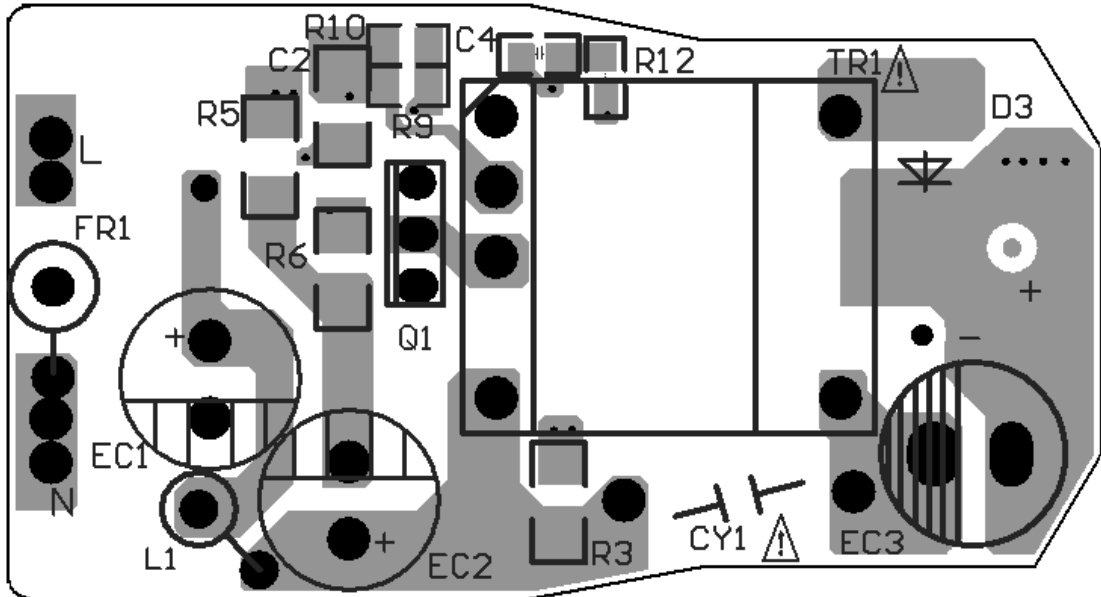


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5 电路板图 P.C.B

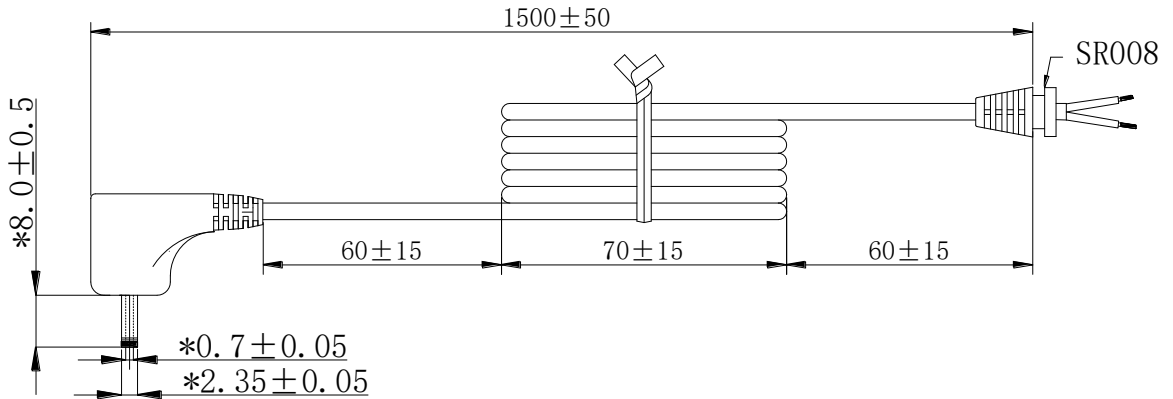


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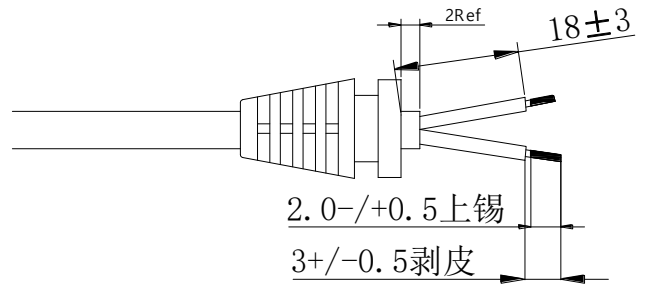
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6 导线图 CORD



备注:

1. 导线规格: 20AWG 2464 外被黑色圆线, 芯线颜色: 红色+黑色, 导线总长 1500mm; 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, 剥线要求如图所示, 接线方式: 红色线接PIN中心, 黑色线接PIN外极, SR-008成型; SR008尺寸为7*4.8mm.
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2KgMAX, 拔出力0.3KgMIN; 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, 2000次.
6. PLUG绝缘阻抗测试: 100MΩ MIN在500DC/分;
PLUG接触阻抗测试: 100mΩ MAX;
7. 导线, SR, PLUG非移行性依据厂内一般进行;
8. 打*号尺寸, 为入料检查项目;
9. 禁止使用VDE所禁用的物质.

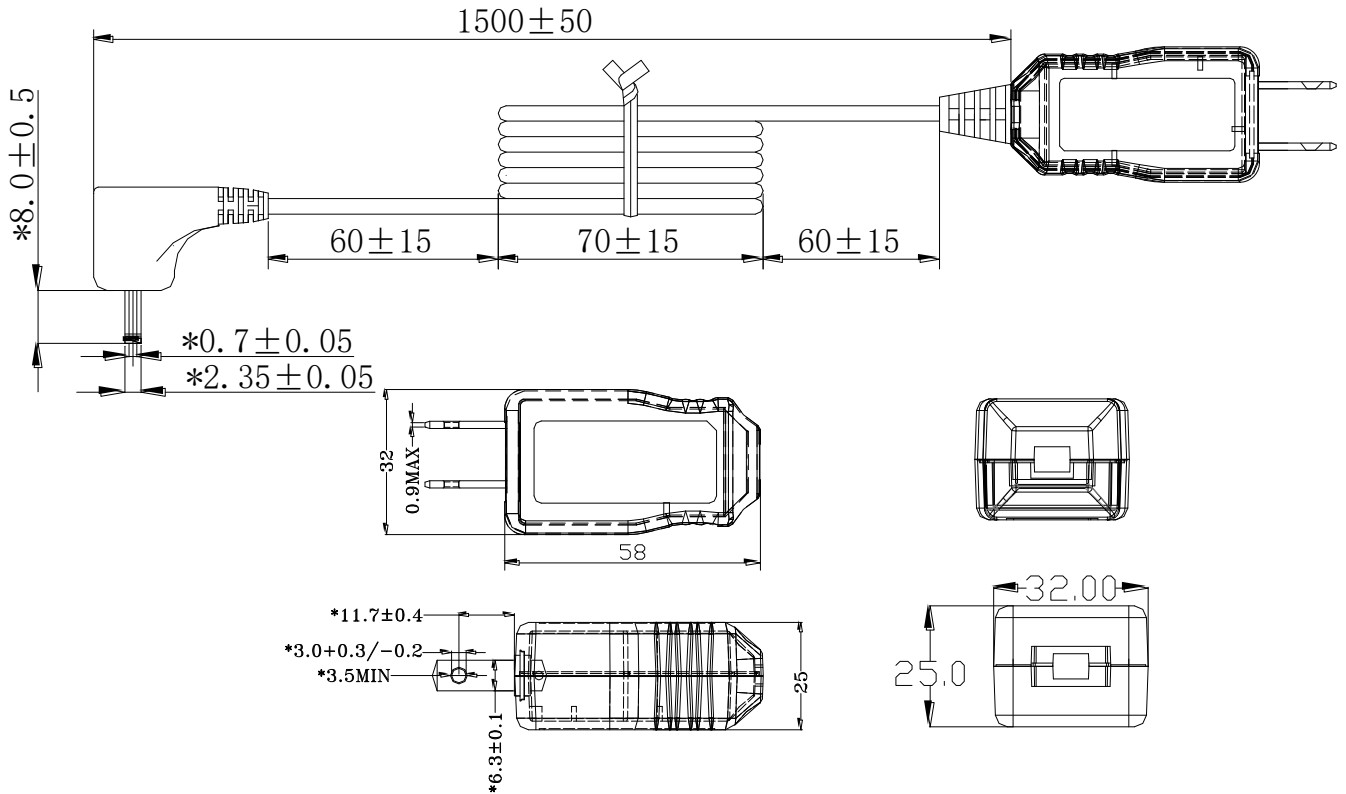


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7 外观示意图 Cord and Mechanical Drawing (单位 unit: mm 颜色 color: Black)

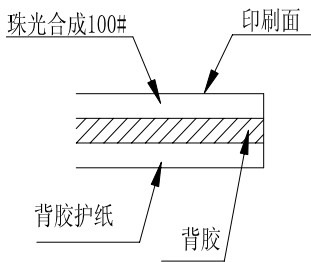


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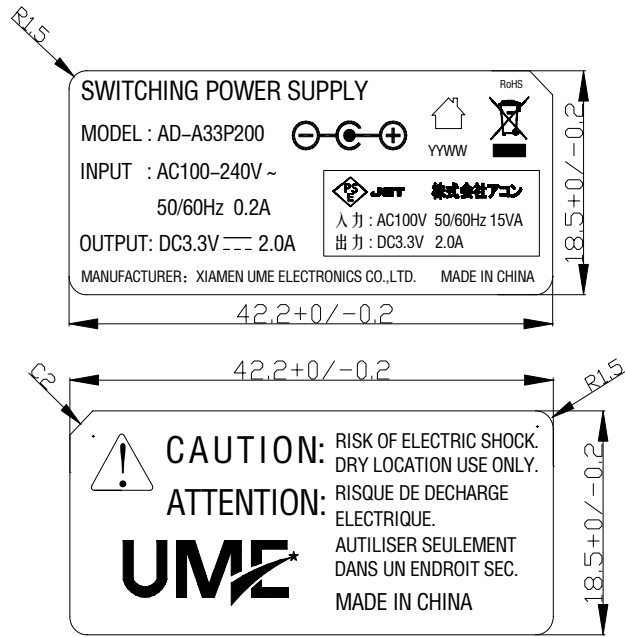
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8 铭板标识 Label

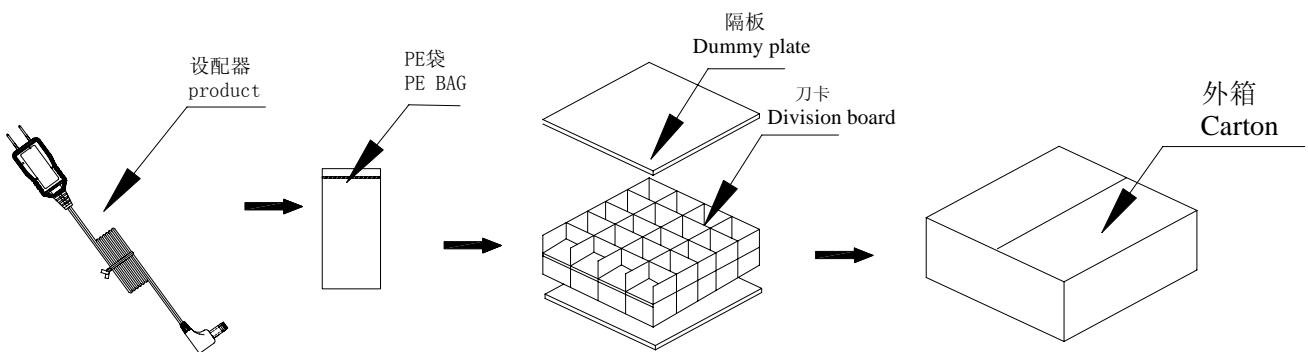


备注:

1. 材质: 珠光合成纸100# (铭板基材厚度0.1mm, 材质PET)。
2. 黑底白字, 表面上半亚膜, 印刷参照ARTWORK, 印刷位置居中。
3. 背胶: 高冠DT#。
4. 密着性: 将铭板贴于实际CASE上, 在-40° C下放置48小时, 再放入75° C, 85%RH下放置48小时后, 于常温常湿下放1小时, 在铭板长度方向上贴上强力胶带(3M NO. 610 18mm宽或等价物), 以垂直方向急速拉起, 铭板不能有起泡或脱落。
5. 粘着力: 依据铭板检验标准测试。
6. YY表示年份, WW表示周期, 年周依订单要求或实际生产日而定。
7. 字体清晰可读, 布局居中, 字体或图案与铭板边缘距离大于0.4mm。
8. 铭板字体为方正姚体。



9 包装方式 Packaging



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10 材料清单 BOM

NO.	Part No	Name	Specification	Q'TY	Manufacturer
1	PCB	PCB	UME-033200A-PCB FR-4	1	TSX/GF/MW/JT/EL
2	R1,R2	CHIP R	4.7M Ω \pm 5% 1206	2	YAGEO/Feng Hua
3	L2	CHIP L	10uH \pm 10% 1206	1	Taiqing/Fenghua
4	R3	CHIP R	470K Ω \pm 5% 1206	1	YAGEO/Feng Hua
5	R4	CHIP R	300 Ω \pm 5% 1206	1	YAGEO/Feng Hua
6	R5	CHIP R	100 Ω \pm 5% 1206	1	YAGEO/Feng Hua
7	R6,R7	CHIP R	1 Ω \pm 1% 1206	2	YAGEO/Feng Hua
8	R8	CHIP R	15K Ω \pm 1% 0603	1	YAGEO/Feng Hua
9	R9	CHIP R	5.1K Ω \pm 1% 0603	1	YAGEO/Feng Hua
10	R10	CHIP R	21.5K Ω \pm 1% 0603	1	YAGEO/Feng Hua
11	R11	CHIP R	10 Ω \pm 5% 0603	1	YAGEO/Feng Hua
12	R12	CHIP R	150K Ω \pm 5% 0603	1	YAGEO/Feng Hua
13	R13	CHIP R	1K Ω \pm 5% 1206	1	YAGEO/Feng Hua
14	R14	CHIP R	47 Ω \pm 5% 0805	1	YAGEO/Feng Hua
15	C1	CHIP C	471 500V \pm 10% 1206 X7R	1	YAGEO/Feng Hua
16	C2	CHIP C	105 50V \pm 10% 1206 X7R	1	YAGEO/Feng Hua
17	C3	CHIP C	105 16V \pm 10% 0805 X7R	1	YAGEO/Feng Hua
18	C4	CHIP C	100PF 50V 0603 COG	1	YAGEO/Feng Hua
19	C5	CHIP C	102 50V \pm 10% 0805 X7R	1	YAGEO/Feng Hua
20	BD1	CHIP BD	ABS8 800V 1A	1	JF/TSC
21	D1	CHIP D	A7 1A/1000V/SOD-123	1	MIC/JF
22	D2	CHIP D	F7 1A/1000V/SOD-123FL	1	MIC/JF
23	D3	Schottky	Z3PK 1045RH 10A 45V SMD	1	ZW
24		Diode	SBR10E45 10A 45V TO-277 SMD		DIODES
25	U1	CHIP IC	LNK4023S SOT23-6	1	PI
26	TR	Transformer	TREE16-033200A	1	HXH/ZY
27	Q1	Transistor	3DD13005ED NPN TO-126 (hFE:20~25)	1	Huawei/HJ

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			VCBO=700V IC: 4A		
28	FR1	FUSE	5Ω 1W ±10%	1	SET/Changsheng/HX
29	FR1	Heat Tube	Φ5mm 125℃(UL)	15*2	Sanlian/CY
30	L1	Inductance	0512-1mH ±10% Φ0.12	1	HXH/ZY/Changsheng
31	EC1	E cap	2.2uF 400V ±20% 105℃ Φ8*11.5mm(BXC)	2	RUBYCON
32	EC2	E cap	12uF 400V±20% 105℃ 10000H Φ10*16mm(BXF)		RUBYCON
33	EC3	E cap	1200uF 10V ±20% 105℃ Φ8*11mm(PT)	1	AiShi
34	CY1	Y cap	Y1 102 400V ±20% P=10mm	1	STE
35	L,N	Connector	14.2*2.4*0.3mm CONT-01	2	Xiezhun
36		Case	A02-A (Black) ABS	1	Jinlifa(SABIC)
37		Case	A02-B (Black) ABS	1	Jinlifa(SABIC)
38		Blade	BLD-011(black) PSE	1	GuanQiao
39		Cable	L:1500mm 20WAG 2464 black 0.7*2.35*8.0	1	DPK/YongAn
40		Label	NAP-033200A-01 A	1	YIHANGXIN
41		Label	NAP-050101K-PSE-02B	1	YIHANGXIN
42		PE bag	150*100*4.0C	1	XINCHENG
43		Out carton	500*445*240mm BIN-050080A	0.005	FU XING /XINCHENGYI
44		Partition	495*440*3mm	0.025	FU XING /XINCHENGYI
45		Division board	495*55*7mm	0.22	FU XING /XINCHENGYI
46		Division board	440*55*7mm	0.12	FU XING /XINCHENGYI
47		Box	100*95*60mm Box-050201K1	1	FU XING /XINCHENGYI
48		Bond	UL UB-100	0.8	U-Bond
49		Solder wire	0.3Ag 0.7Cu 99Su	0.1	YunNan TIN
50		Solder Bar	1Cu 99Su	0.3	YunNan TIN

批准 Approval:	Vicon	审核 Check:	Zengliang	制表 Execution:	JB
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