



## 产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP17072602/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-B90P100	审核 Check	
日期 Date	2017-07-26	拟制 Execution	LMY

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

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.

## 3 技术要求 Technical requirements

### 3.1 安全标准 Safety Standards

Japan: 電安法别表第8第1、2項

### 3.2 Input

Rated Input Voltage	100-240Vac
Operating Range	90-264Vac
Rated Input Frequency	50~60Hz +/-10%
Input Frequency Range	45~66Hz
Rated Input Current	0.3A
Maximum Input Power	13W
Input Power (No Load)	0.3W Max
Primary Current Protection	Over current protection: Resistor fuse

### 3.3 Output

Rated Dc Output Voltage	8.8-9.45V
Rated Load Current	1000mA
Over Current Protection	1.1Amin@Vin=110Vac/220Vac
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	70% minimum @ input 115AC/230VAC to meet Energy star 2.0(CEC V)
DC Plug	Φ2.1*5.5*9.5mm(音叉/直头)
DC Cord	L=1500mm 22AWG 2464 white

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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 $^{\circ}$ 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 $^{\circ}$ 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 $^{\circ}$ 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	Electric strength	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 $\Omega$
5	Temperature Rise	1.Apply rating input voltage(100/240V),	Housing surface

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	Test	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).	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 (for US) EN55022 (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℃ 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	High Temperature Leave 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	Low Temperature Leave 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	High Temperature Humidity 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.	
5	Temperature Humidity test 1. Temperature 40℃, 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℃/ 1 hour to +80℃/ 1 hour, 60 cycles 2. After that test, test set is left in normal temperature, humidity	

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		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 cycle test profile. The y-axis represents temperature in degrees Celsius, with markers at +70, +45, 室温 or +20 (Room Temp or +20), and -20. The x-axis represents time in hours, with markers for 2h, 4h, 2h, 12h, 1h, 2h, and 1h. The profile is divided into five stages: A (2h ramp up to +70°C), B (4h hold at +70°C), C (2h ramp down to +45°C), D (12h hold at +45°C), and E (1h ramp down to -20°C, 2h hold at -20°C, 1h ramp up to 室温 or +20°C).</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 examine it	

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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	Don't take the label off the main body
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

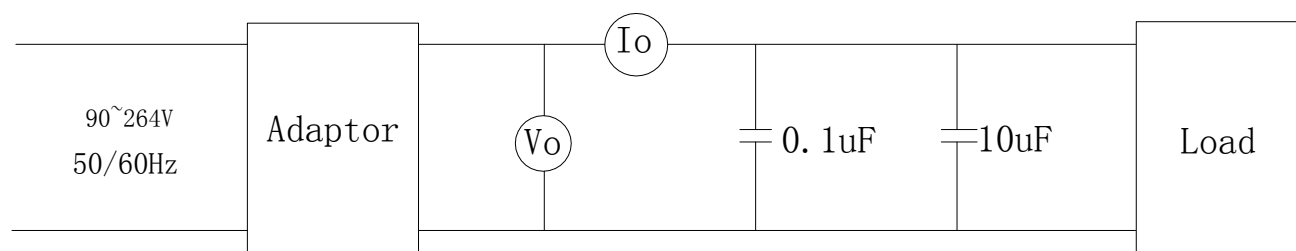
**【DC cord Test Items】**

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	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

**3.6 测试线路图 Test Circuit**



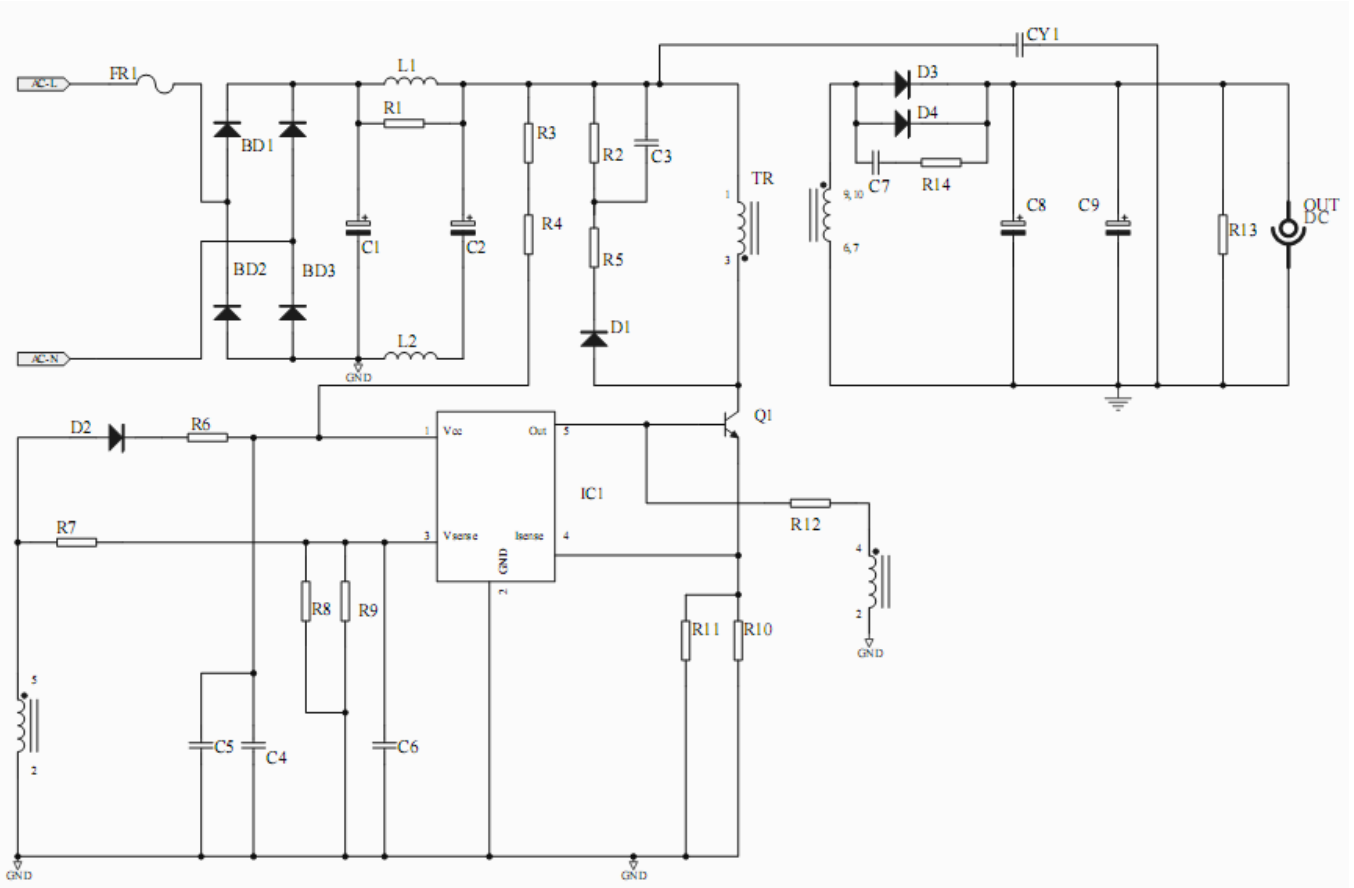
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4 线路图 Schematic Diagram

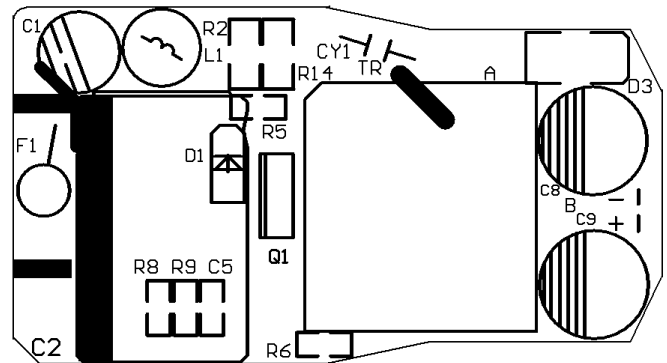
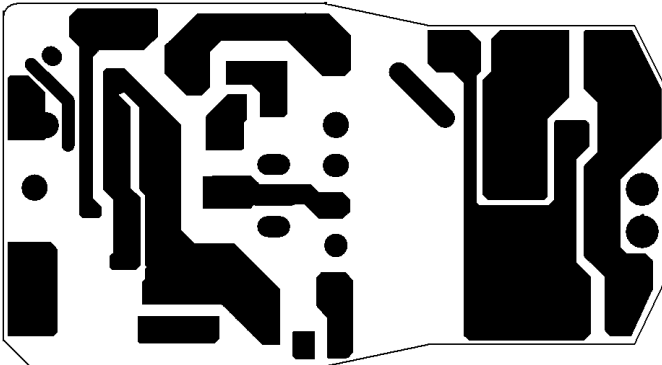
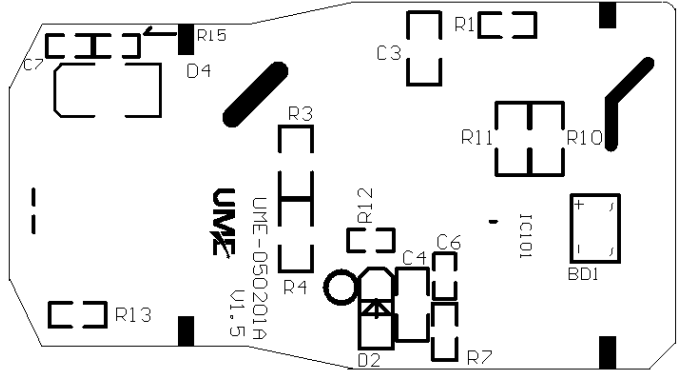
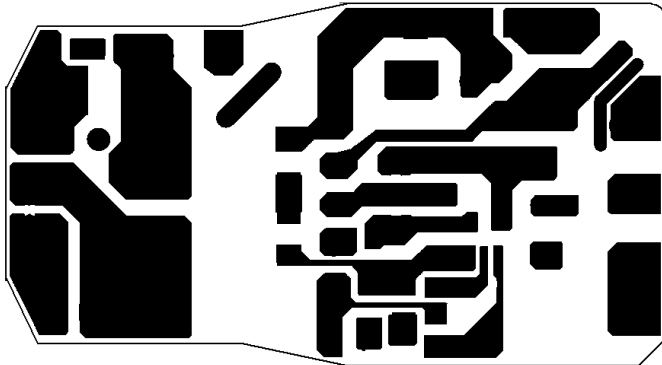


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5 电路板图 P.C.B

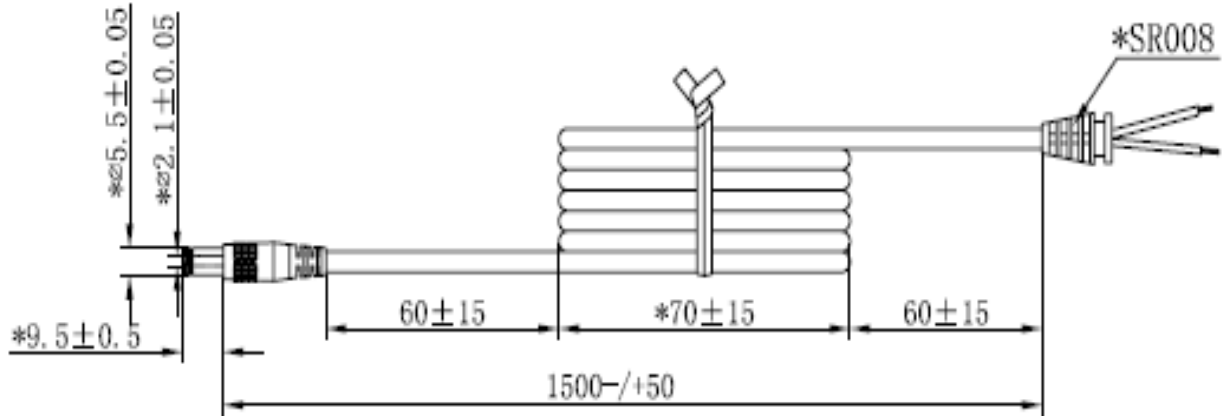


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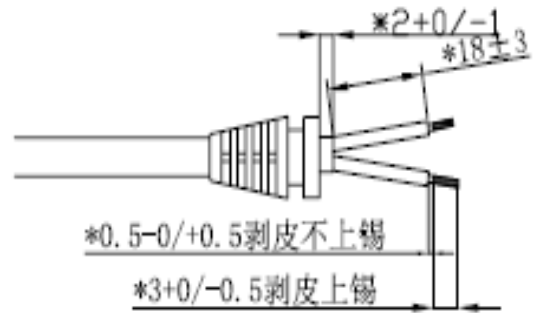
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6 Cord (单位 unit: mm 颜色 color: WH)



备注:

1. 导线规格: 22AWG 2464 音叉 白色, 芯线颜色: 红色+蓝色, 导线总长 1500mm; 材质符合RoHS要求, 导线按图示尺寸翻扎、测试, 导线测试开路, 对应线头线尾应短路导通, 极性连接正确;
2. 两头剥线长度: 剥线长度3mm $\pm$ 1 $\pm$ 0, 剥线要求如图示, 剥线成纤维的直径为1.15mm MAX, 接线方式: 红色芯线接PIN中心, 蓝色芯线接外侧, PG头成型, 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0.5KgMIN; 插拔6000MIN次不允许有电气和机械性能的损坏, 且满足拔出0.1KgMIN;
5. 摇摆测试: 吊重500g, 以40次/分钟90° 往复, 每一往返为一次, 至少1000次;
6. PLUG绝缘阻抗测试: 100M $\Omega$ MIN在500DC/分; PLUG接触阻抗测试: 10m $\Omega$ MAX;
7. 导线, SR, PLUG非例行检测须按厂内一般进行; 禁止使用VDE所禁用的物质;
8. 打\*号尺寸, 为入料检查项目;

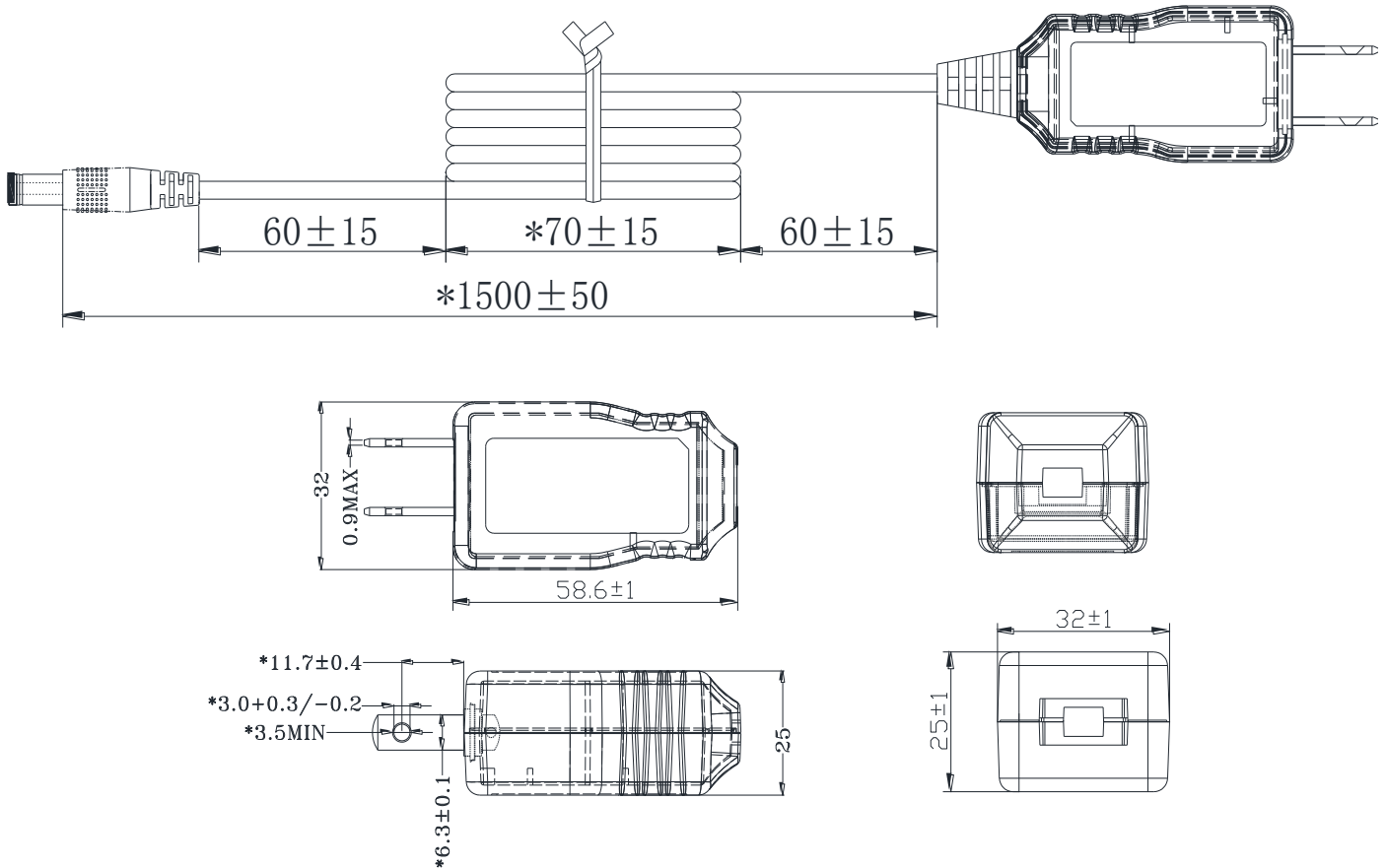


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7 外观示意图 Mechanical Drawing (单位 unit: mm 颜色 color: WH)

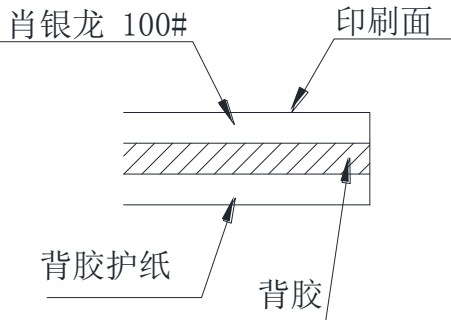


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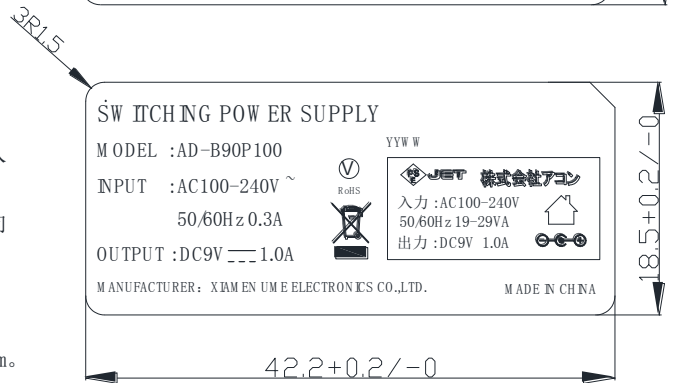
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## 8 铭板标识 Label

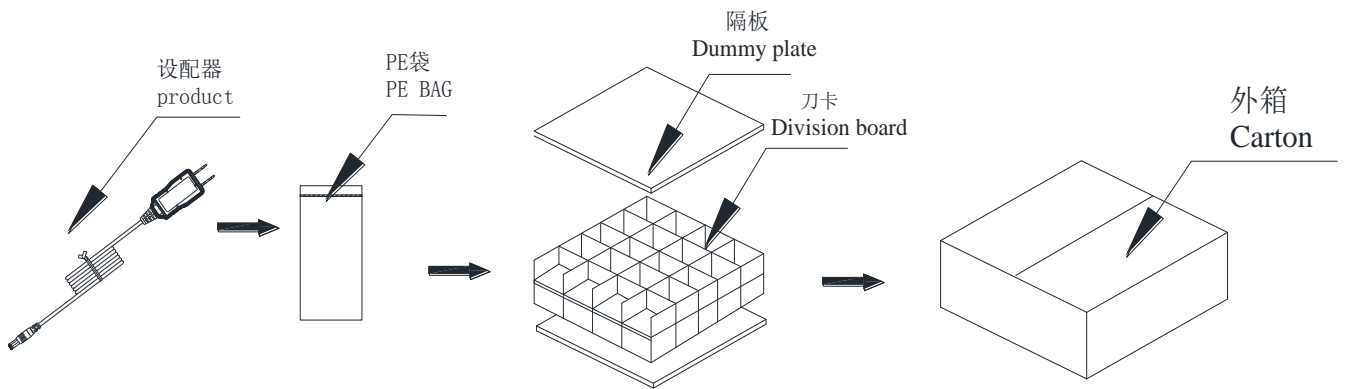


备注:

1. 材质: 肖银龙 100# (铭板基材厚度0.1mm, 材质PET)。
2. 银底黑字, 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, 90%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 BOM list**

NO.	ITEM	DESCRIPTION	SPECIFICATION	QTY	MANUF ACTURER
1	PCB	PCB	UME-050201A-PCB	1	TengXingSheng
2	R1	CHIP R	4.7KΩ ±5% 0805	1	YAGEO/FENG HUA
3	R2,R15	CHIP R	200KΩ ±5% 1206	2	YAGEO/FENG HUA
4	R3,R4	CHIP R	1.5MΩ ±5% 1206	2	YAGEO/FENG HUA
5	R5	CHIP R	110Ω ±5% 0805	1	YAGEO/FENG HUA
6	R6	CHIP R	1Ω ±5% 0805	1	YAGEO/FENG HUA
7	R7	CHIP R	21.5KΩ ±1% 0805	1	YAGEO/FENG HUA
8	R8	CHIP R	68KΩ ±1% 0805	1	YAGEO/FENG HUA
9	R9	CHIP R	8.2KΩ ±1% 0805	1	YAGEO/FENG HUA
10	R10,R11	CHIP R	2.4Ω ±5% 1206	2	YAGEO/FENG HUA
11	R12	CHIP R	1KΩ ±5% 0603	1	YAGEO/FENG HUA
12	R13	CHIP R	2KΩ ±5% 0805	1	YAGEO/FENG HUA
13	R14	CHIP R	22Ω ±5% 0805	1	YAGEO/FENG HUA
14	C3	CHIP C	102 500V ±10% 1206 X7R	1	FENG HUA
15	C4	CHIP C	10uF 16V ±20% 1206 Y5V	1	FENG HUA

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16	C5	CHIP C	22pF 50V ±10% 0805 COG	1	FENG HUA
17	C6	CHIP C	104 50V ±10% 0805 X7R	1	FENG HUA
18	C7	CHIP C	102 50V ±10% 0805 X7R	1	FENG HUA
19	BD1	CHIP BD	ABS8 800V 1A	1	TSC/GME/JF
20	D1,D2	CHIP D	SRGC10MH/F7	2	ZW/JF/GME
21	IC101	CHIP IC	IW1706-01 SO-8C	1	IWATT
22	TR	TRANSFORMOR	TREE19-120101L	1	NANHUA
23	Q1	Transistor	3DD13005ED	1	HW/HWD/UTC
24	FR1	RESISTOR	5Ω 1W ±20%	1	CHANGSHENG
25	FR1	Heat tube	Φ5mm 125°C(UL)	1	RUISI
26	D3	DIODE	SS36 60V 3A SMB	1	JF/ PAIJNT
27	C1	ECAP	2.2uF 400V ± 20% 105 °C Φ 6.3*11mm(CGX)	1	RUBYCON
28	C2	ECAP	15uF 400V ± 20% 105 °C Φ 10*21mm(PX)	1	RUBYCON
29	C9	ECAP	470uF 16V ±20% 105°C Φ8*12mm( PZ)	1	Aishi
30	CY1	Y1	Y1 102 400V ±20% P=10mm	1	HUAXING
31	L1	INDUCTANCE	470uH Φ4.5*7 Φ0.2mm	1	JINWEI
32	L,N		13.6*2.0*0.3mm	2	XINCHENGDA
33	CASE	CASE	A02-A ( WH ) PC940(f1) ( E207780 )	1	Haozhen (SABIC)
34	CASE	CASE	A02-B ( WH ) PC940(f1) ( E207780 )	1	Haozhen (SABIC)
35	BLD	BLD	BLD-012 PSE ( white )	1	GUANQIAO
36	DC CORD	DC CORD	DC-Φ2.1*5.5*9.5mm L:1500mm SR008 22AWG 2464 white	1	YTX/RUNFA
37		NAP	NAP-090100D2-PSE	1	YHX
38		NAP	NAP-090100D-PSE-02	1	YHX
39		PE BAG	150*100*4.0C	1	HONGSHNEGDA
40		Out carton	500*445*240mm BIN-050080A	0.005	FuXing/ FangXin

批准 Approval:	JB	审核 Check:	ZengL	制表 Execution:	LMY
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<b>产品规格承认书</b> <b>SPECIFICATION</b>				文件编号 File No.	UME-EG-SP17072602/A1
品名 Product	开关电源 SPS	型号 Model	AD-B90P100	日期 Date	2017-07-26

41		partition	495*440*3mm	0.025	FuXing/ FangXin
42		cutting disc	495*55*7mm	0.22	FuXing/ FangXin
43		cutting disc	440*55*7mm	0.12	FuXing/ FangXin
44		UL GLUE	UL UB-100	0.55	YouBang
45		Solder Bar	1Cu 99Sn	0.25	YUNNANTIN
46		Solder Wire	0.3Ag 0.7Cu 99Sn	0.15	YUNNANTIN

批准 Approval:	<i>JB</i>	审核 Check:	<i>ZengL</i>	制表 Execution:	<i>LMY</i>
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