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XIAMEN UME ELECTRONICS CO., LTD.

产品规格承认书 SPECIFICATION

文件编号 File No.: UME-EG-SP1408151/A1

客户 Customer	*****	核准 Approval	
品名 Product		品管确认 QC	
型号 Model	AD-A50P180	审核 Check	
日期 Date	2014-10-23	拟制 Execution	SEVEN

客户承认意见 Confirmation by Customer	客户签署 Stamp & Signature
☐ 合格 Accept	
☐ 不合格 Reject	
☐ 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

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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 The products meet RoHS requirements.

3 技术要求 Technical requirements

3.1 安全标准 Safety Standards

UL (USA):UL1310/IEC60950

CCC: GB4943-2011

Japan: J60950

3.2 Environmental conditions

Operating temperature	-20~+60℃
Storage temperature	-30~+85℃
Operating humidity	0~95%
Storage humidity	0~95%

3.3 Input

Rated Input Voltage	100-240Vac
Rated Input Voltage Range	90-264Vac
Rated Input Frequency	50~60Hz +/-10%
Input Frequency Range	45~66Hz
Rated Input Current	0.4A
Input Power (No Load)	0.1W Max@ rated input voltage
Primary Current Protection	Over current protection: Current fuse

3.4 Output

Rated Dc Output Voltage	5V±5%/9V±5%/12V±5%
Rated Load Current	1800mA±5%/1800mA±5%/1350 mA±5%
Ripple	≦ 100mVp-p
Average output efficiency	72.6%/79.65%/79.65% minimum, meet CEC V level @ input 115AC/230Vac
Output Rise time	The Supply shall have a start-up rise time of less than 50mS to rise to 2.5V

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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 μ A
2 ESD Test (Contact Discharge)	1. Test is conducted at room temperature/humidity. (20 $\pm$ 5 $^{\circ}$ C, RH 30 $\pm$ 5%) 2. Test set is 150pF/150 Ω . 3. (1) $\pm$ 8KV: Contact discharge test. +phase: 3times, -phase: 3times, total: 6times. (2) $\pm$ 10KV: Contact discharge test. +phase: 3times, -phase: 3times, total: 6times. (Note) After each ESD test, it should be discharged.	10KV No destruction, no malfunction.
ESD Test (Breath discharge)	1. Test is conducted at room temperature/humidity. (20 $\pm$ 5 $^{\circ}$ C, RH 30 $\pm$ 5%) 2. Test set is 150pF/150 Ω . 3. (1) $\pm$ 10KV: air discharge test. + phase: 3times, - phase: 3times total: 6times. (2) $\pm$ 15KV: Air discharge test. + phase: 3times, - phase: 3times, total: 6times. (Note) After each ESD test, it should be discharged.	15KV No destruction, no malfunction.
3 Insulation withstand voltage	Condition=AC3000V, 1min. or 3600V, 1Sec. Test place=Between AC to DC plug and AC to Case 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 25K.
	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 65K.
6 Output short	Rated input and output short 24 hours.	CASE no deformation, no danger.
7 Rated input	Input AC0~90V and output rated load. Impressed time : 24h	CASE no deformation, no fire and abnormal hot, no danger.

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8	EMI/Conducted Emission	Input 100/240V, output no load and rated load.	Meet VCCI class B requirement, It is better to have 6 dB's allowance.
9	Blanket Test	Out put condition=Maximum current Temperature=room temperature Condition=folding acrylic or cotton blanket in four bend and puts an adapter inside and leave until the temperature is saturated.	No smoke, no fire, no deform of housing
10	E cap life time	Rate input and output, ambient temperature 25℃	50000H min.
11	Open-short test	All the parts open or short and rated input.	No smoke, no fire, no electric shock. Case surface $\Delta T \leq 55^{\circ}\text{C}$.
12	Half short test	All parts resistor half short.	No smoke, no fire, no electric shock. Case surface $\Delta T \leq 55^{\circ}\text{C}$.
13	Output Over current protection	Rated input and output maximum load condition. Current control cannot work..	Safety damage.
14	Impulse Noise	Add impulse voltage of tip voltage $\pm 1500\text{V}$, wide 50, 100, 400, 1000ns to AC input unit for 1000nS between 2minutes. Repetition frequency: 30~100Hz	There be not malfunction of the feature of the equipment. Output ripple 400mVp-p max.
15	Surge	IEC61000-4-5 1.2 $\times$ 50 μs 1.0KV Positive and negative all three times, Current limiting impedance 100 Ω , Time interval 30 seconds min.	No destruction.

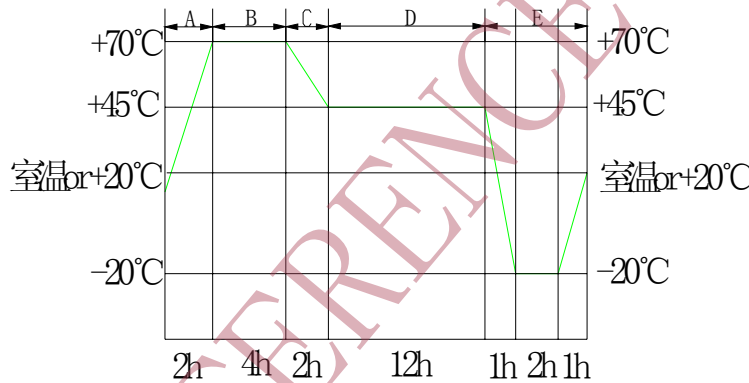
【Environmental Test Items】

Item		Conditions	Criteria
1	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
2	Low Temperature Leave	1. Temperature -40℃ for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 1(hour), then evaluate.	
3	heat-resisting load	1. Temperature 60℃ $\pm 2^{\circ}\text{C}$, air moisture 90-95% RH for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 1(hour), then evaluate.	
4	cold-resistant load	1. Temperature -30℃ $\pm 2^{\circ}\text{C}$, for 96 hours. 2. After that test, test set is left in normal temperature, humidity condition more than 1(hour), then evaluate.	
5	wet-resistant load	1. Temperature 40℃ $\pm 2^{\circ}\text{C}$, air moisture 90-95% RH for 96 hours. 2. After that test, test set is left in normal temperature, humidity	

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		condition more than 1(hour), then evaluate.
6	Heat Shock Test	1. Condition: -40°C/ 30min to +80°C/ 30min , 250 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 

【Mechanical Test Items】

Item	Conditions	Criteria
1	Drop Test Height of drop: 1m, 2times/each surface (total 12times), Floor: concrete. 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.	No parts remove, no abnormal mechanic performance, (outside scratches are acceptable)
2	Unit Vibration Test 1. Vibration condition:10~100Hz/min. 21.6m/s ² 2. (1)Top/Bottom direction:4-hours (2)Right/Left direction:2-hours (3) Front/Back direction:2-hours	
3	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	
4	AC Plug in/out Test (AC Blade part) 1. AC Plug in/out test more than 10,000times 2.10(times/min). 1 time is in/out action.	
5	Impact resistance Acceleration 100G/11ms waveform: Half sine wave	Electrical and mechanical

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		times: X、Y、Z each direction three times.	performance is OK.
6	AC BLD insert and pull out test.	AC BLD insert and pull out socket 10,000 times	Electrical and mechanical performance is OK, but BLD scratches is OK.
7	AC BLD* cutting strength	The AC fixed, from the other side use 39N to pull.	After test deform less than 0.3mm, not from fell off the case.
8	AC BLD breakdown strength	Both sides of the AC BLD load 93.1 N/15 seconds	Electrical and mechanical performance is OK.
9	Exfoliate with cellophane tape and examine it	Use Nichiban 18mm or 24mm width	A character do not disappear.
10	Alcohol Examination-resistant	Weight:500g Test cycles=100times	Don't take the label off the main body
11	The reliability to face each other to come off the label	① -30℃ ② 85℃ ③ 50℃ 90% Each 96 hours ④After, it is a thermal shock examination of 96 cycles	
12	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
13	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

【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 = 2.45N(250g) Angle = +/-60° Cycles in every minute = 30times/min. Test cycles = 1000times Note: 1 cycle = swing to the opposite direction and return to the original one.	Broken rate 30% Operate properly.
3	pressure test	Apply a 68N (7kgf) static load on the pressure of the plug device 1 minute, The solder must not peel off from PCB,	No abnormality such as cord cut, bushing comes

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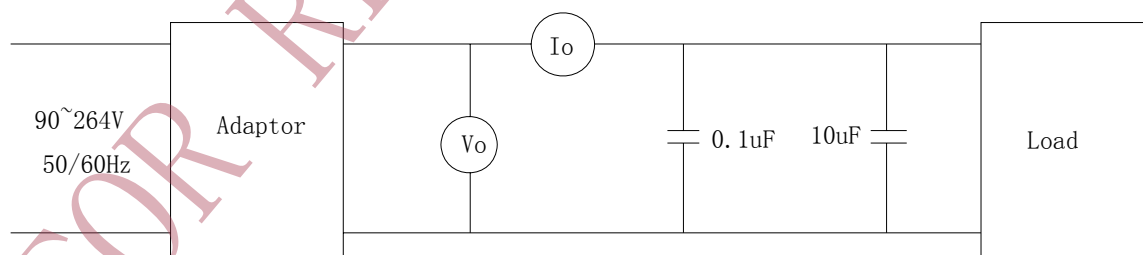
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		mechanical and electric characteristic shall be normal	off.
4	コードのこじり	DC コード 取出し方向と直角に 50N で、上下左右各 1 分間引っ張る。	コード切断やプラグの抜け等異常の無い事。
5	非移行性（耐スクラッチ性）	ケース及びコードは、ABS 樹脂及びスチロール樹脂に対し、 $9.8 \times 10^3 \text{Pa}$ の荷重を加え、温度 $60 \pm 5^\circ \text{C}$ 湿度 $30 \pm 5\%$ 、72 時間放置	移行なきこと

【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.	

3.6 测试线路图 Test Circuit



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4 线路图 Schematic Diagram

5 电路板图 P.C.B



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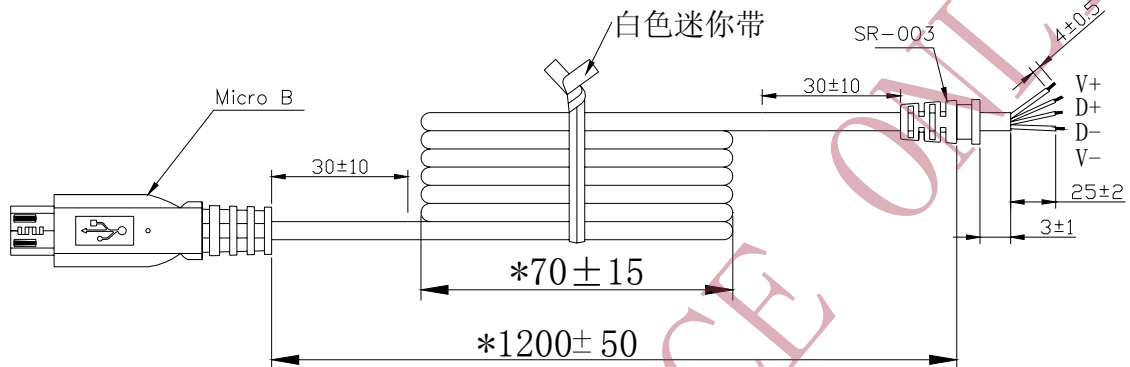
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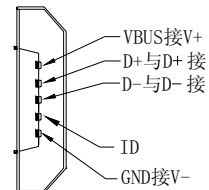
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6 CORD 图 (单位 unit: mm 颜色 color: white)



Contact Number	Signal Name	Typical Wiring Assignment
1	VBUS	与V+红色接
2	D-	与D-白色接
3	D+	与D+绿色接
4	ID	
5	GND	与V- 黑色接



- 导线规格: PIN1&PIN5为22AWG PIN2&PIN3为28AWG, 白色, 线长1200mm。 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, 两条分出头线的误差不超过5mm。
- SR拉力测试: 吊重1Kg/10分钟, 不可有位移, 吊重5Kg/1分钟, 位移2mm。
- 插拔力测试: 插入力2KgMAX, 拔出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0.1KgMIN。
- 摇摆测试: 吊重250g, 以40次/分作60°往返, 每一往返为一次, PLUG和USB处1000次最少。
- PLUG绝缘阻抗测试: 100MΩ MIN在500DC/分; PLUG接触阻抗测试: 100mΩ MAX;
- 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。
- 插拔次数为10000Min, 不允许有电气和机械性能的损坏, 且满足拔出为8N Min。
- 打*号尺寸, 为入料检查项目;

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King Wu

审核 Check:

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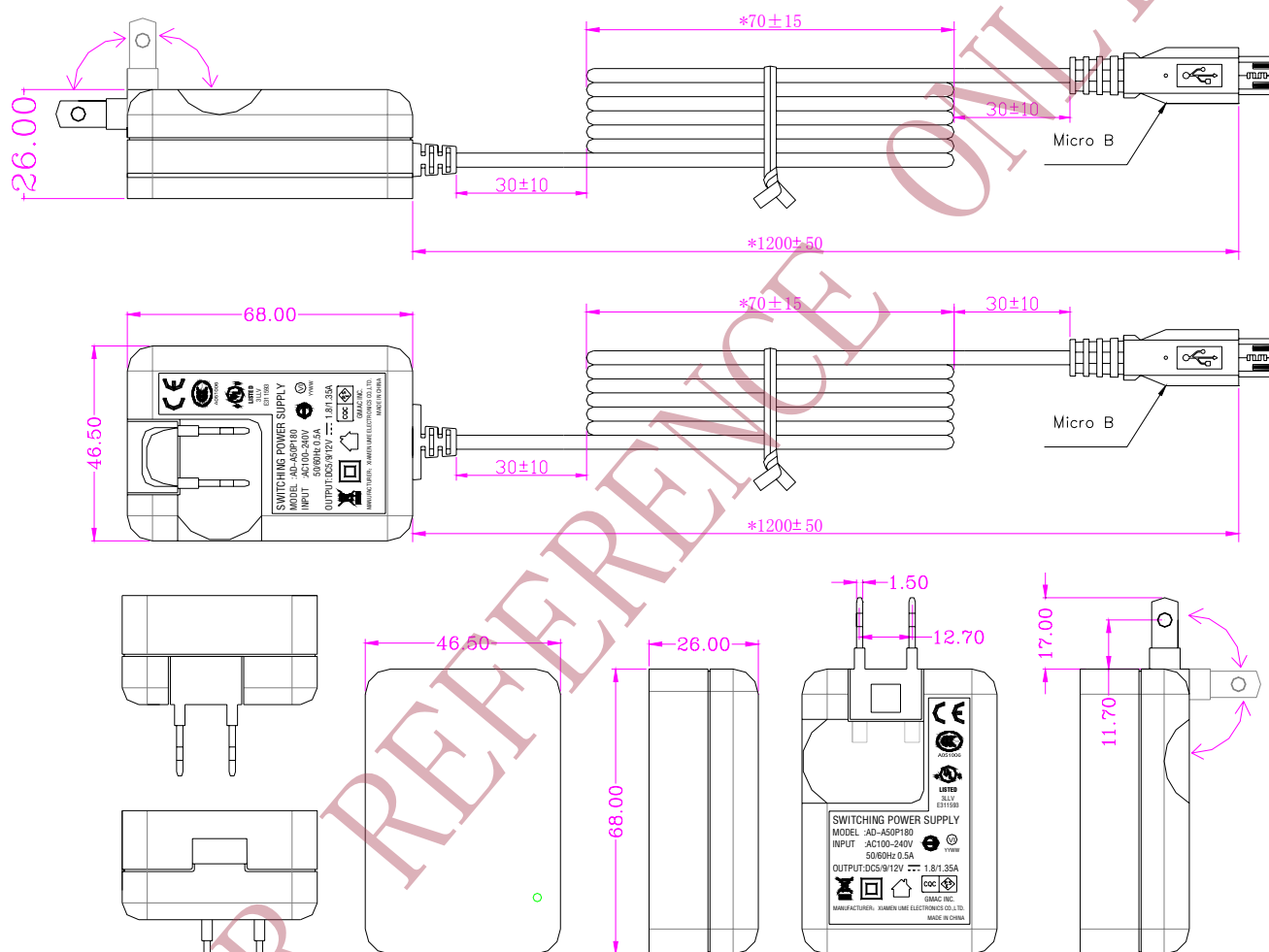
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7 外观示意图 Mechanical Drawing (单位 unit: mm 颜色 color: White)

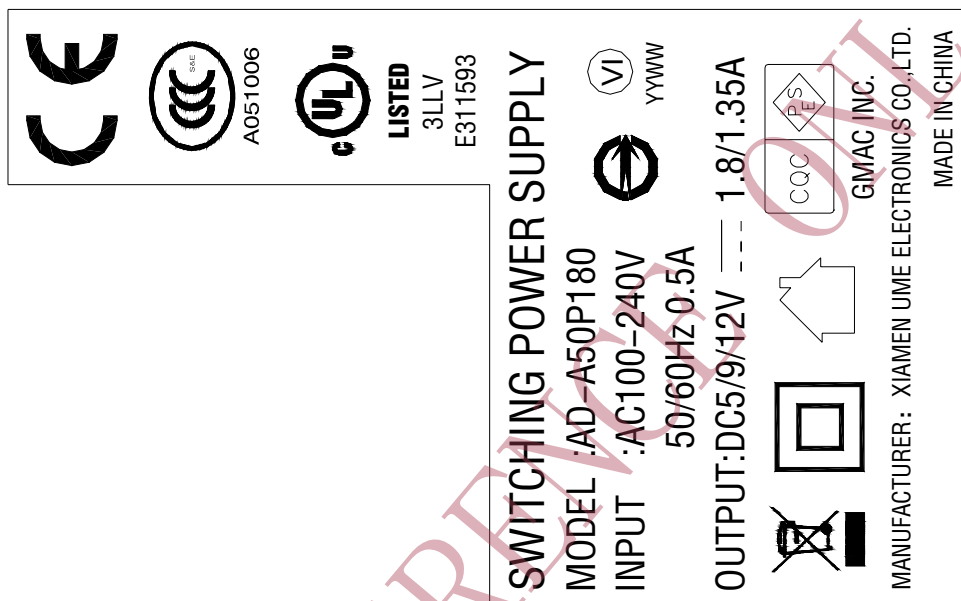


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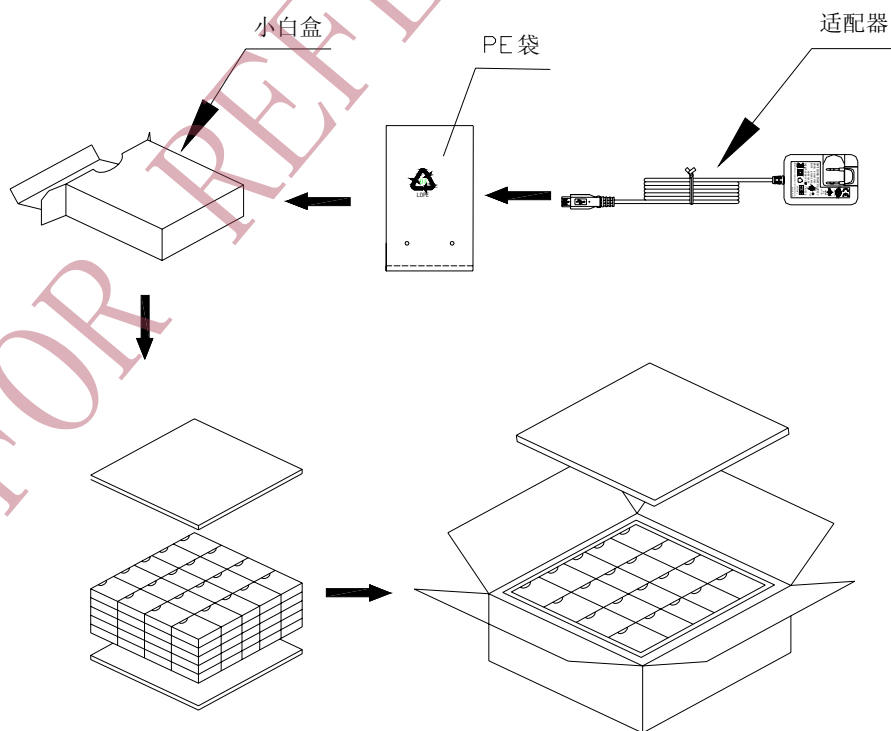


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8 铭板标识 Nameplate



9 包装方式 Packaging



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