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1. Electrical Specification/电气特性

1.1 General Scope/概述

This product is a 45W single Type-C power adapter; input voltage is 100 Vac ~ 240 Vac; output is 5V3A/9V3A/12V3A/15V3A/20V2.25A, PPS: 5-15V@3A; support for USB PD3.0. The basic design requirements are provided as follows:

该产品是一款 45W 单 Type-C 电源适配器；输入电压 100Vac~240Vac；输出为 5V3A/9V3A/12V3A/15V3A/20V2.25A, PPS:5-15V@3A；支持 USB PD3.0。其设计基本要求如下：

1.2 Product Description/产品描述

- SMPS Adaptor (Wall mount) 插墙式适配器 SMPS Adaptor (Desk-top) 桌面型适配器
 SMPS Unit (With Case) 带铁壳型电源 Li-ion battery charger 锂电池充电器
 Others 其他型电源

2. Electrical requirements (电气特性)

2.1 Input characteristics (输入特性)

Rated input voltage 额定输入电压	100Vac to 240Vac
Limited working Range 极限工作范围	90 Vac to 264 Vac
Frequency range 频率范围	50Hz/60Hz ±5%
Max input ac curren 满载输入电流	1.0A max at full load and 100Vac
Power factor 功率因数	-
Leakage Current 泄漏电流	Less Than 0.25mA 240Vac input

2.2 General characteristic (一般特性)

参数	测试条件	最小值	典型值	最大值	单位
平均效率	VIN=115/230Vac Vo=5V/3A	81.39	-	-	%
	VIN=115/230Vac Vo=9V/3A	86.62	-	-	%
	VIN=115/230Vac Vo=12V/3A	87.40	-	-	%
	VIN=115/230Vac Vo=15V/3A	87.73	-	-	%
	VIN=115/230Vac Vo=20V/2.25A	87.73	-	-	%
空载损耗	VIN=115/230Vac, 输出空载@5V	-	-	0.1	W
轻载损耗	VIN=115/230Vac, Po=10mA@20V	-	-	0.5	W
轻载损耗	VIN=115/230Vac, Po=25mA@20V	-	-	1.0	W
轻载损耗	VIN=115/230Vac, Po=50mA@20V	-	-	1.7	W

浪涌电流	VIN=100Vac/240Vac	I ² *T 降额, 50%@冷机, 70%@热机 初级整流器件 (F1/BD1/EC1 等)			
启动时间	VIN=100Vac	-	-	3	S

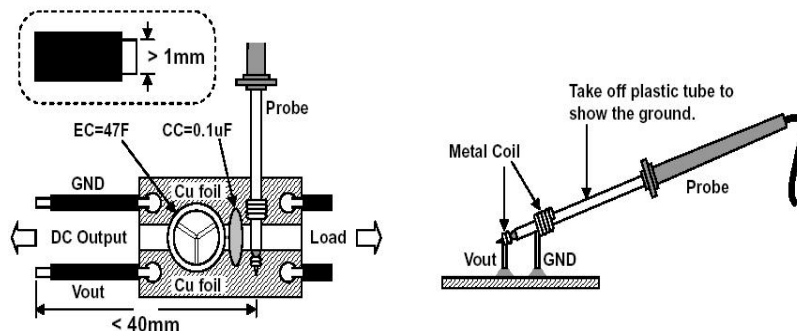
- 备注: 1) 平均效率测试需常温下至少热机半小时, 且输出电压在 Type-C 端测试;
2) 平均效率指 100%, 75%, 50% 和 25% 的额定功率下的效率平均值;
3) 产品符合 DOE level VI 能效标准;
4) 空载功耗应在热机 15 分钟后测量;
5) 启动时间, 为 AC ON POINT to DC +5V 输出的 90%.

2.3 Output characteristic (输出特性)

参数	测试条件	最小值	典型值	最大值	单位
输出电压	Vout=5V, Iout: 0-3.0A	4.5	5.00	5.5	V
	Vout=9V, Iout: 0-3.0A	8.55	9.00	9.45	V
	Vout=12V, Iout: 0-3.0A	11.4	12.00	12.60	V
	Vout=15V, Iout: 0-3.0A	14.25	15.00	15.75	V
	Vout=20V, Iout: 0-2.25A	19.00	20.00	21.00	V
输出电压纹波	VOUT=5V/9V/12V/15V/20V; 输入 180~264Vac, 输出 0~100% load	-	-	200	mV
输出电压过冲	空载和满载开机瞬间	-	-	10%*Vo	V
输出保持时间	输入 100Vac/60Hz, 输出 20V/2.25A	5	-	-	mS
输出上升时间	VIN=100Vac@5V3A	-	-	50	mS
输出动态负载	测试条件: 15V/20V: 20%~80%负载变化, 电流变化率为 0.25A/us, 周期 T1=T2=0.5mS, 电源适配器输出电压变化低于±8%; 5V/9V/12V: 20%~80%负载变化, 电流变化率为 0.25A/us, 周期 T1=T2=0.5mS, 电源适配器输出电压变化低于±10%。				

备注: 1) 输出电压测试条件: 输出电压在输出线 (1000mm) 端测试.

2) 纹波是使用示波器带宽为 20MHz 测量峰峰值得到的; 在输入 180~264Vac, 输出满载的情况下, 测试纹波和噪声需要在输出 1000mm 线端并联一个 0.1uF 的瓷片电容和一个 10uF 低内阻的电解电容, 如下图:



3. Protection requirements/保护功能

3.1 Short circuit protection/短路保护

Power adapter shall have self-limiting protection to protect against short circuit or overload conditions. No damage to the power adapter shall result from a continuous or intermittent short circuit condition. It will be auto-recovered when the failure is removed. 电源适配器有自我限制保护功能来防止短路或过载条件, 在连续或断续的短路条件下电源将不会有任何损坏。短路故障排除后, 电源将会自动恢复正常工作。

3.2 Over current protection/过流保护

After output current of power supply reach OCP current, the over current protection shall operate, the power supply will be auto-recovered when over current faults remove. 发生过流后, 保护将会动作, 过流故障排除后, 电源将自动恢复正常工作。

Output Voltage/输出电压	OCP
Vout=5V@3A	4<OCP<5. 5A (输入 180-264Vac)
Vout=9V@3A	
Vout=12V@3A	
Vout=15V@3A	
Vout=20V@2. 25A	2. 7<OCP<5A
PPS: 5-15V@3A	3<OCP<5A

3.3 Over Voltage protection/过压保护

When the optical coupling fails or some devices fail (not in the normal user use conditions), the overvoltage protection will act, the overvoltage fault troubleshooting, and the power supply will automatically return to normal operation. 当光耦失效或者某些器件失效时(非用户正常使用条件)过压保护将会动作, 过压故障排除, 电源将自动恢复正常工作。

Output Voltage/输出电压	OVP
Vout=5V	<11V
Vout=9V	<17V
Vout=12V	<22V
Vout=15V	<24V
Vout=20V	<27V

3.4 Peak current/峰值电流

Input is 230 Vac, and the output shall meet the corresponding specification requirements; 输入 230Va, 输出需满足对应规格要求;

Nominal Voltage (V)	Load current (A) SR=0.25A/us	Regulation Voltage (V)
15	3A@40ms~4.5A/40ms	13.5V-16.5V

3.5 Over temperature protection (过温保护)

When the temperature is too high, the power is automatically protected and restored. 当温度过高时, 电源会自动保护和恢复.

3.6 Overload protection (过载保护)

Under any circumstances, the power adapter does not allow the risk of shell deformation, explosion, fire, electric shock, etc. When the overload phenomenon is removed, the output of the power adapter is not abnormal.

电源适配器在任何情况下, 不允许出现外壳变形、爆炸、起火、电击等安规风险, 当过载现象移除后, 电源适配器输出无异常.

3.7 Input overpressure protection (输入过压保护)

When the input voltage exceeds the rated range, the power adapter should not have the risk of explosion, fire, shell deformation, electric shock and other safety regulations, and the leakage of electrolytic capacitor electrolyte from the shell is not accepted. When removed, loss of function is acceptable.

在输入电压超出额定的范围时, 电源适配器不应该出现爆炸、起火、外壳变形、电击等安规风险, 电解电容电解液渗出外壳不被接受。当过压移除后, 功能丧失可以接受.

3.8 Capacitive load (容性负载)

With the output line end and the capacitor of 220uF, the power adapter shall meet the requirements of the specification.

输出线端并 220uF 的电容, 电源适配器通电后各项电性能应符合规格书要求.

3.9 Reverse irrigation current (倒灌电流)

The input is suspended, the output is plus 4.75V DC voltage, and the inverted current should be less than 5mA.

输入悬空, 输出端外加 4.75V 直流电压, 倒灌电流应小于 5mA.

3.10 DIP (输入电压掉落)

The power adapter shall meet the input voltage drop requirements in IEC61000-4-11. Drop to 0%Vin, time Class 10ms, class B; drop to 40%Vin, time 200ms, class C; drop to 70%Vin, time 500ms, Level B requirements; drop to 0%Vin, time 5000ms, level C requirements.

电源适配器需满足 IEC61000-4-11 中关于输入电压掉落的要求。跌落至 0%Vin、时间 10ms、B 级要求；跌落至 40%Vin、时间 200ms、C 级要求；跌落至 70%Vin、时间 500ms、B 级要求；跌落至 0%Vin、时间 5000ms、C 级要求。

4. Environmental requirements/环境要求

4.1 Temperature/温度

Operating temperature:-10°C to +40°C. 正常工作温度为-10°C至+40°C。

Storage temperature:-40°C to +70°C. 存储温度为-20°C至+70°C。

4.2 Humidity/湿度

Operating humidity:5% to 95%(non-condensing). 正常工作湿度为 5%至 95%(无冰凝结条件下)。

Storage humidity:5% to 95%(non-condensing). 存储湿度为 5%至 95%(无冰凝结条件下)。

4.3 Operating Altitude/海拔高度

≤5000m Elevation. 最大海拔高度小于或等于 5000 米。

4.4 Cooling/冷却方式

Cooling shall be with natural convection cooling. 空气自然对流冷却。

4.5 Weather conditions/气候条件

Conform to the tropical climate. **适用于热带地区**

5. Reliability requirements/可靠性要求

5.1 MTBF qualification/平均间隔故障时间估算

The MTBF shall be at least 100000hours at 25°C, full load and input voltage 115Vac and 230Vac conditions, calculated using the Telcordia SR-332 issue2. 平均间隔故障时间至少 100000 小时，在 25°C 环境及满载输出，输入电压为 115Vac 和 230Vac 条件下，计算使用标准 Telcordia SR-332。

5.2 E-cap Lifetime/电解电容寿命

The life estimation of aluminum capacitor shall be at least 10000 hours at 25 °C, of full load and input voltage 230Vac conditions. 铝电解电容寿命计算至少 10000 小时，在 25°C 环境及满载输出，输入电压 230Vac 条件下。

5.3 Low temperature storage test/低温贮存试验

Shutdown state, (-40°C ± 3°C) low temperature storage for 48h, after the normal temperature recovery for 2h, the basic function, appearance and assembly test, should be able to meet the corresponding requirements.

关机状态，(-40°C ± 3°C) 低温存储 48h，常温恢复 2h 后，进行基本功能、外观及装配检测，应能符合相应的要求。

5.4 Low temperature operation test/低温运行试验

The ger is powered with full load, ($-10^{\circ}\text{C} \pm 3^{\circ}\text{C}$) low temperature test for 24h; after 2h, basic function, appearance and assembly test shall meet the requirements.

充电器通电满载工作, ($-10^{\circ}\text{C} \pm 3^{\circ}\text{C}$) 低温试验 24h; 常温恢复 2h 后, 常温恢复后基本功能、外观及装配检测应符合要求.

5.5 High temperature storage test/高温贮存试验

Shutdown state, ($70^{\circ}\text{C} \pm 3^{\circ}\text{C}$) high temperature storage for 48h, after the normal temperature recovery for 2h, the basic function, appearance and assembly test, shall be able to meet the corresponding requirements.

关机状态, ($70^{\circ}\text{C} \pm 3^{\circ}\text{C}$) 高温存储 48h, 常温恢复 2h 后, 进行基本功能、外观及装配检测, 应能符合相应的要求.

5.6 High temperature operation test/高温运行试验

The ger is powered with full load, ($55^{\circ}\text{C} \pm 3^{\circ}\text{C}$) high temperature test for 24h; after 2h, basic function, appearance and assembly test shall meet corresponding requirements after the normal temperature recovery.

充电器通电满载工作, ($55^{\circ}\text{C} \pm 3^{\circ}\text{C}$) 高温试验 24h; 常温恢复 2h 后, 常温恢复后基本功能、外观及装配检测应能符合相应的要求.

5.7 Temperature shock test/温度冲击试验

Shutdown state, ($-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$) / ($+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$) for 30 minutes each temperature impact for 16 cycles, starting from the low temperature, the high and low temperature switching time requirement is less than 3min. After 2h of normal temperature recovery, the function, appearance and assembly test should meet the requirements after the condition test.

关机状态, ($-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$) / ($+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$) 各 30 分钟的温度冲击 16 个循环, 由低温开始, 高低温切换时间要求小于 3min。常温恢复 2h 后, 条件试验结束后进行功能、外观及装配检测应符合要求.

5.8 Steady-state damp heat test/ 恒定湿热试验

Humidifying water: distilled water or deionized water with a PH value of between 6.0 to 7.2 at 23°C . Power up the charger for full load operation, ($55^{\circ}\text{C} \pm 2^{\circ}\text{C}$), relative humidity, $93\% \pm 3\%$, 48 hours. After the test, the temperature and humidity of the test box should be restored to the standard atmospheric conditions used for testing and testing within 1h~4h. As soon as the cooling stage is over, the DUT should enter the recovery program. After 2h of recovery, the function,

appearance and assembly testing should be normal.

加湿用水：蒸馏水或去离子水，该水在 23℃时，PH 值 6.0~7.2 之间。

将充电器通电满载工作，（55℃±2℃），相对湿度 93%±3%，48 小时。

试验结束后，应在 1h~4h 内将试验箱的温度和湿度恢复到检测和试验用的标准大气条件。

降温阶段一结束，DUT 就应进入恢复程序，恢复 2h 后，功能、外观及装配检测应正常。

5.9 Salt spray test/盐雾试验

Two spray cycles, 2 hours each, with a 22-hour damp heat storage cycle after each spray cycle. The spray condition is temperature (15-35) °C, concentration of (5 ± 1)% sodium chloride solution; storage condition is (40 ± 2°C), relative humidity reaches 90% to 90% to 95%; for 24 hours, DUT shall be tested, and the metal part shall not corrode. Note: The DUT should be cleaned and dried with 35°C distilled water or deionized water.

2 个喷雾周期，每个 2 小时，每个喷雾周期后有一个为期 22 小时的湿热存储周期。喷雾条件为温度（15-35）℃，浓度为（5±1）%的氯化钠溶液；储存条件为（40±2℃），相对湿度达到 90%~95%；实验完成后放置 24 小时，测试后在常温、常湿、常压环境中放置 24h 后对 DUT 进行外观、功能及机械结构检测，应正常，金属部分不能腐蚀。

注：如需清洗的 DUT 需用温度 < 35℃蒸馏水或者去离子水清洗干燥后检测。

5.10 Single fall/单体跌落

Height of 1M, free drop, cement ground, six sides (according to the minimum / middle / maximum surface drop order) for one round, 2 rounds, a total of 12 times, no functional abnormalities before and after the test, continue to do the extreme drop test for 4 rounds, a total of 36 times;

高度 1M，自由跌落，水泥地面，六面（按最小面/中面/最大面顺序跌落）为一轮，2 轮，共 12 次，测试前后无功能异常，继续做极限跌落测试 4 轮，前后共 36 次；

5.11 Vibration test/振动测试

Test 7~50HZ with a fixed amplitude of 0.8mm and 50~200HZ with a constant acceleration of 4g, X, Y, and Z axis for 1 hour each. DUT should have no sound or obvious parts, all functions and performance are normal.

测试 7~50HZ 采用定幅 0.8mm，50~200HZ 定加速度 4g, X, Y, Z 轴各 1 小时. DUT 内部应无声响或明显部件松动, 各项功能、性能正常.

5.12 AC pin angle life test/AC pin 插角寿命测试

Insertion and pull out is 1 time, at the rate of 20-30 times per minute and the corresponding AC pin vertical plug 2000 times; AC pin pull out force is less than 40N, more than 8N; test the mechanical structure should be not damaged, good contact can be normal charging and normal use, AC pin foot photo confirmation.

插入与拔出为1次，以每分钟插拔20-30次的速率与这对应AC pin垂直插拔2000次插拔；AC pin拔出力小于40N，大于8N；试验后机械结构应无损坏，接触良好能正常充电及正常使用，要求对AC pin脚拍照确认。

5.13 AC pin foot thrust test/AC pin 脚推力测试

Apply 20kg of thrust or pull force to the AC pin foot for one minute. The AC Pin foot should not fall off after experiment, the mechanical structure should be not damaged after test, and can be charged and used normally with good contact.
在AC pin脚处施加20kg的推力或拉力，保持一分钟，实验后AC Pin脚无脱落，试验后机械结构应无损坏，接触良好能正常充电及正常使用。

5.14 Burn-in test/老化测试

The Aging temperature is 40°C, 220AC input, and the rated load of 80% -100% will work continuously for 168 hours, and the electrical performance should be normal after the test.

老化温度40°C，220AC输入，额定负载80%-100%持续工作168小时，试验后电气性能需正常。

5.15 Hot plug /热插拔

The socket is fixed to the plug and pull machine fixture during the test, the adapter is fixed at the turntable end, in the full load working state, align the socket in a straight line, adjust the plug and pull test frequency 30 times per minute, test times 1200 times, the input voltage is the maximum AC voltage as required by the product admission, the electrical performance of the test sample should be normal after the test.

试验时插座固定到插拔机夹具上不动，适配器固定在转盘一端，处于满载工作状态，对准插座成一直线，调节插拔试验频率30次/每分钟，测试次数1200次，输入电压按产品承认书要求最大值AC电压，将试验样品在试验后电气性能需正常。

5.16 Expansion cylinder/滚筒

The height of the drum is 0.5M, and the drum speed is 12~14 times per minute, totaling 50 times. After testing, the mechanical structure should be not damaged, and the internal parts of the charger are not loose or foreign body sound; no component damage is allowed, and the solder joints and pads are not cracked.
滚筒高度为0.5M高度，滚筒速度12~14次每分钟，共50次，试验后机械结构应无损坏，充电器内部部件无松动及异物响声；元器件不允许有任何情况的损伤，焊点和焊盘不允许出现开裂的情况。

5.17 Bridge reactor short circuit test/桥堆短路测试

Six short circuit BD1, observe the working situation, fuse open; adapter does not burst, no fire.

六点短路 BD1, 通电观察工作情况, 保险丝开路; 适配器不出现炸裂, 不起火.

5.18 On/Off test/On/Off 测试

5S on / 5S off is 1,3000 tests, normal function.

5S on/5S off 为 1 次, 测试 3000 次, 功能正常.

5.19 Noise test criteria/噪音测试标准

Input of 220Vac / 50Hz, the output from the no-load 0A- -full-load current, 0.1A step to increase the current. Microphone distance 30cm from adapter test front, back, left, right, top five faces. Requirements: The test maximum value shall be less than 20dBA. If the maximum value of each frequency point in the spectrum exceeds 0dBA (focus on 50Hz), the test maximum value should be less than 17dBA (meet 3dB allowance). Environment: 10dB.

输入 220Vac/50Hz, 输出从空载 0A—满载电流, 0.1A 步进增加电流。麦克风距离适配器 30cm 测试前, 后, 左, 右, 上五个面。要求: 测试最大值应低于 20dBA。频谱中各个频点最大值如果超过 0dBA (重点关注 50Hz), 要求测试最大值应低于 17dBA (满足 3dB 余量)。环境: $\leq 10\text{dB}$.

5.20 Common mode noise test/共模噪声测试

Common-mode voltage is lower than 2.5V, oscilloscope test: input voltage is 253V / 50Hz, 25%, 50%, 100% cement load. The oscilloscope negative stage is the earth (N), the negative stage of the adapter output, and the voltage difference between the waveform amplification test platform is less than 2.5V.

共模电压低于 2.5V, 示波器测试: 输入电压 253V/50Hz, 25%, 50%, 100%水泥负载。示波器负级接大地, 正接适配器输出的负级, 把波形放大测试两平台之间的电压差小于 2.5V.

5.21 Temperature rise test/配整机温升测试

The ambient temperature is 25°C, input 230 Vac, reach the temperature of the adapter (excluding the bottom) of the plug, take the highest value of each surface, and the maximum temperature on the surface of the adapter shell is 55°C.

环境温度 25°C, 输入 230Vac, 搭配整机最大功率下 2 小时达到热平衡测试适配器 5 个面 (除去插头底面) 的温度, 取各面最高值, 适配器外壳表面最高温度值 $\leq 55^\circ\text{C}$.

6. Safety and EMI requirements/安全及 EMI 要求

6.1 Hi-pot test/高压测试

Hi-pot test shall meet with the following table test requirements, 100% production test must be performed for each test item and be maintained at that

level for a minimum of 5seconds without failure.

高压测试满足下表的要求, 100%在线间品执行此项测试, 并每一项目至少保持 1min 时间无任何故障。

ITEM	SPECIFICATION	REMARK
Primary to Secondary 输入—输出	3000Vac/5mA/1min	No arcing No broken/无飞狐无 击穿
Primary to P.G/输入—地	--	
Note:Factory test criteria for mass production shall be 3.6KVac , 3S, 5mA		

6.2 Insulation resistance/绝缘阻抗

ITEM	SPECIFICATION	REMARK
Primary to Secondary 输入—输出	>100MΩ ;DC500V	---
Primary to P.G/输入—地	---	---

6.3 Safety standards/安规标准

safety:accord with(安全:符合标准)

Certificate	Country/国家	Standards/标准
<input type="checkbox"/> CCC	China/中国	GB8898-2011
<input type="checkbox"/> CCC	China/中国	GB4943-2011
<input checked="" type="checkbox"/> CCC	China/中国	GB4943. 1-2022
<input type="checkbox"/> CQC	China/中国	GB4706
<input type="checkbox"/> CQC	China/中国	GB9706
<input type="checkbox"/> UL/CUL	USA/美国	UL62368
<input type="checkbox"/> UL/CUL	USA/美国	UL1310
<input type="checkbox"/> UL/CUL	USA/美国	UL60601-1
<input type="checkbox"/> CB	/	IEC62368
<input type="checkbox"/> CB	/	IEC60335
<input type="checkbox"/> CB	/	IEC61558
<input type="checkbox"/> CB	/	IEC60601-1
<input type="checkbox"/> GS	Europe/欧洲	EN62368
<input type="checkbox"/> GS	Europe/欧洲	EN 60335
<input type="checkbox"/> GS	Europe/欧洲	EN 61558
<input type="checkbox"/> GS	Europe/欧洲	EN 60601-1
<input type="checkbox"/> CE	Europe/欧洲	EN62368

<input type="checkbox"/> CE	Europe/欧洲	EN 60335
<input type="checkbox"/> CE	Europe/欧洲	EN 61558
<input type="checkbox"/> CE	Europe/欧洲	EN 60601-1
<input type="checkbox"/> UKCA	England/英国	BS EN62368
<input type="checkbox"/> UKCA	England/英国	BS EN 60335
<input type="checkbox"/> UKCA	England/英国	BS EN 61558
<input type="checkbox"/> UKCA	England/英国	BS EN 60601-1
<input type="checkbox"/> RCM	Australia/澳洲	AS/NZS 62368
<input type="checkbox"/> RCM	Australia/澳洲	AS/NZS 60335
<input type="checkbox"/> RCM	Australia/澳洲	AS/NZS 61558
<input type="checkbox"/> RCM	Australia/澳洲	AS/NZS 60601-1
<input type="checkbox"/> PSE	Japan/日本	J62368
<input type="checkbox"/> PSE	Japan/日本	J60335
<input type="checkbox"/> PSE	Japan/日本	J61558
<input type="checkbox"/> PSE	Japan/日本	J60601-1
<input type="checkbox"/> KC	Korea/韩国	K62368
<input type="checkbox"/> KC	Korea/韩国	K60335
<input type="checkbox"/> KC	Korea/韩国	K61558
<input type="checkbox"/> KC	Korea/韩国	K60601-1
<input type="checkbox"/> EAC	Russia/俄罗斯	EN 62368
<input type="checkbox"/> EAC	Russia/俄罗斯	EN 60335
<input type="checkbox"/> EAC	Russia/俄罗斯	EN 61558
<input type="checkbox"/> EAC	Russia/俄罗斯	EN 60601-1

6.4 EMI/电磁干扰

EMI: accord with (EMI: 符合标准)

<input type="checkbox"/> EN55032 <input type="checkbox"/> J55032 <input type="checkbox"/> K32	Electromagnetic compatibility of multimedia equipment — Emission requirements 多媒体设备的电磁兼容性. 发射要求
<input checked="" type="checkbox"/> GB9254. 1-2022	Information technology equipment, multimedia equipment and receivers—Electromagnetic compatibility—Part 1: Emission requirements 信息技术设备、多媒体设备和接收机电磁兼容第 1 部分: 发射要 求
<input type="checkbox"/> GB4343. 1 <input type="checkbox"/> EN55014-1 <input type="checkbox"/> J55014-1	Electromagnetic compatibility Requirements for household appliances, electric tools and similar apparatus Part 1: Emission

<input type="checkbox"/> K55014-1	电磁兼容 家用电器，电动工具和类似器具的要求 第 1 部分： 发射
<input type="checkbox"/> FCC Part 15 B	FCC CFR 47 Part 15 subpart B 美国联邦通信法规第 47 卷 15 章内无意的辐射器材的相关规定
<input type="checkbox"/> ICES-003: Issue 7	Electromagnetic compatibility of Information Technology Equipment (including Digital Apparatus) Emission requirements for Canada 加拿大信息技术设备(包含数字设备)电磁兼容. 发射要求

6.5 EMS/电磁抗扰度

EMS: accord with/EMS: 符合标准

<input type="checkbox"/> EN55035 <input type="checkbox"/> K35	Information technology equipment , Sound and television broadcast receivers—Immunity characteristic limits and methods of measurement 信息技术设备、声音和电视广播接收机抗扰度测量限值和方法	
EN61000-4-2 GB/T17626. 2	Electrostatic discharge immunity test 静电放电抗扰度测试	CON: ±8KV; AIR: ±15KV; 10 charge/point for Con; 10 charge/point for Air Meet criteria: B
EN61000-4-4 GB/T17626. 4	Electrical fast transient/burst immunity test 电快速瞬变脉冲群抗扰度测试	AC port: ±1KV Meet criteria: B
EN61000-4-5 GB/T17626. 5	Surge immunity test 浪涌抗扰度测试	AC port: L-N: ±2KV L-PE/N-PE: ±4KV 1.2/50uS-8/20uS phase position: 0, 90, 180, 270 Meet criteria: B

6.6 CE/RE (传导/辐射)

CE/RE Referring Standards EN55022 Specification Class B, the unit guarantees 6dB,
电源适配器传导/辐射参考标准 EN55022 规范, B 类, 单体保证 6dB 余量;

6.7 RoHS/环保要求

环保要求 RoHS: 所有零部件符合 Q/PST02-2006 《关于禁用物质和应申报物质的管理规定》

7. Mechanical requirements/结构参数

7.1 Enclosure/外壳

The power supply size/外壳尺寸:55*55*30mm

Appearance Color: White/外观颜色: 白色

plastic case, flame retardant grade:UL94V-0/塑胶外壳, 阻燃等级: UL94 V-0;

7.2 Input connector/输入插脚

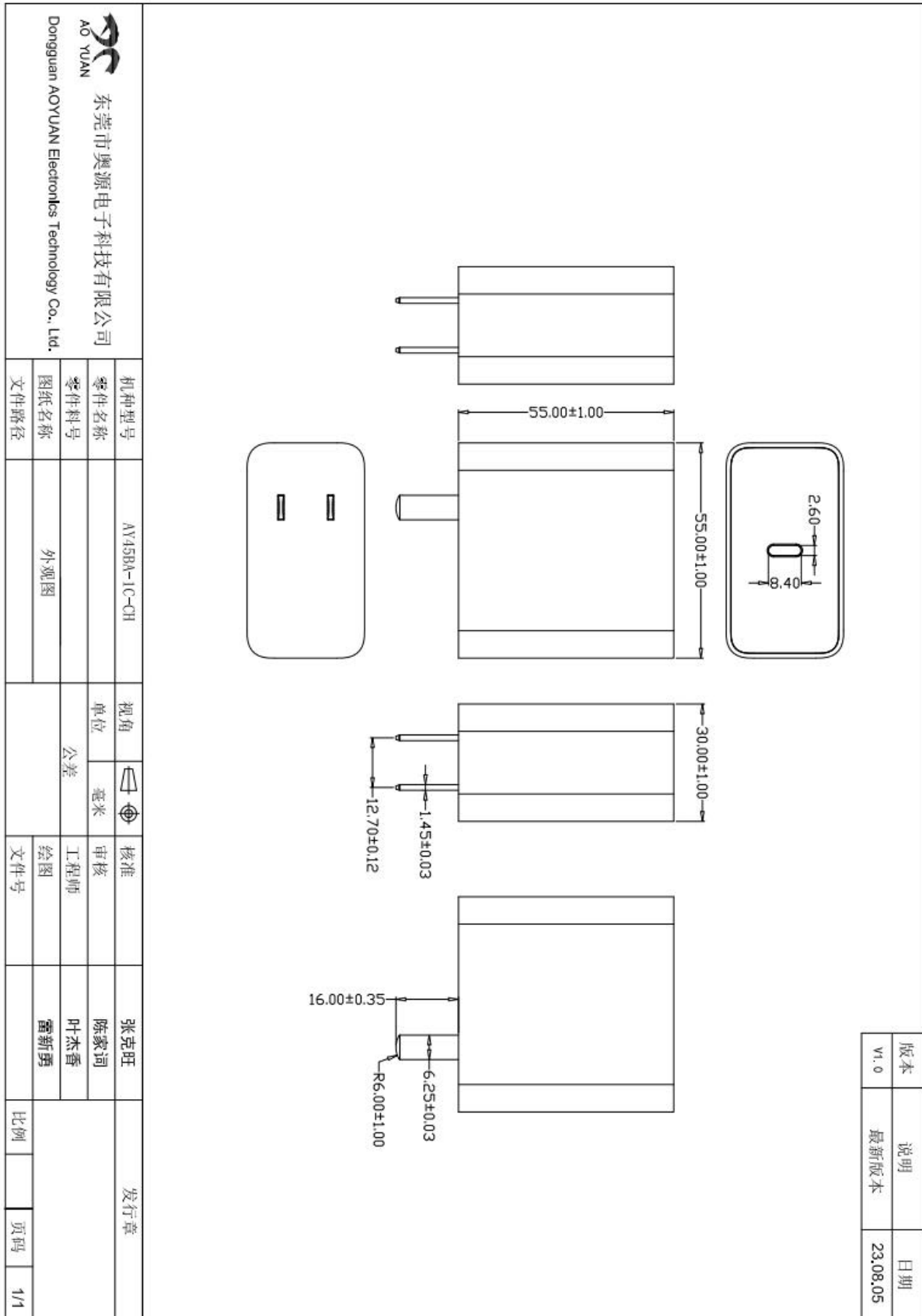
2 pin In the rules/2pin 中规插脚

7.3 Out connector/输出线材及插头

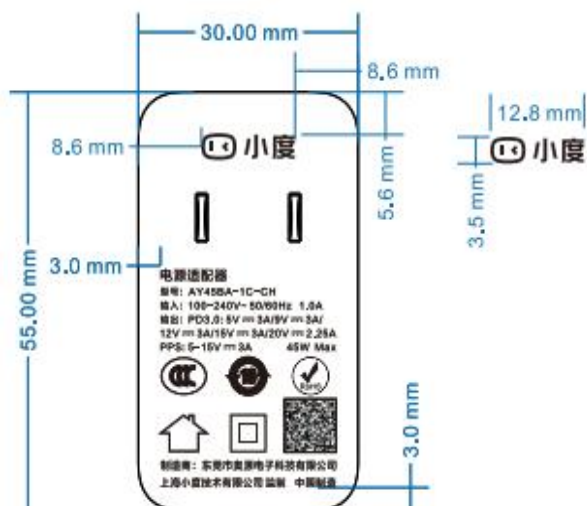
DC plug/DC 头尺寸:Type-C

DC Terminal plug and pull/DC 端子插拔: The insertion force is 2kgf, the extraction force is 0.8kgf~2kgf, and the insertion force is 2000 times, the function is normal and the terminal is invisible(Pull life 10000 times);插入力 \leq 2kgf, 拔出 力 0.8kgf~2kgf, 插拔 2000 次, 插拔力测试后功能正常, 端子无形变 (插拔寿命 \geq 10000 次);

7.4 Outline dimensions/机构图 (unit: mm)



7.5 Label/铭牌



Scale:1x

字体：方正兰亭中黑简体

二维码类型:QR

二维码尺寸：7X7mm

二维码显示内容及编码原则:

显示内容:AY06CB510000001

第1-2码为生产商代码:AY代表奥源

第3-4码为产品型号固定不变(06代表45W快充头),

第5码为年份码:A代表2019, B代表2020...

第6码为月份码:1-9表示1月-9月,A:10月 B:11月,C:12月

第7码为日期码:1代表1号,A代表10号,B代表11号...

第8码为产品状态:1代表正常生产;

第9-15码为产品流水号码:0000001-9999999



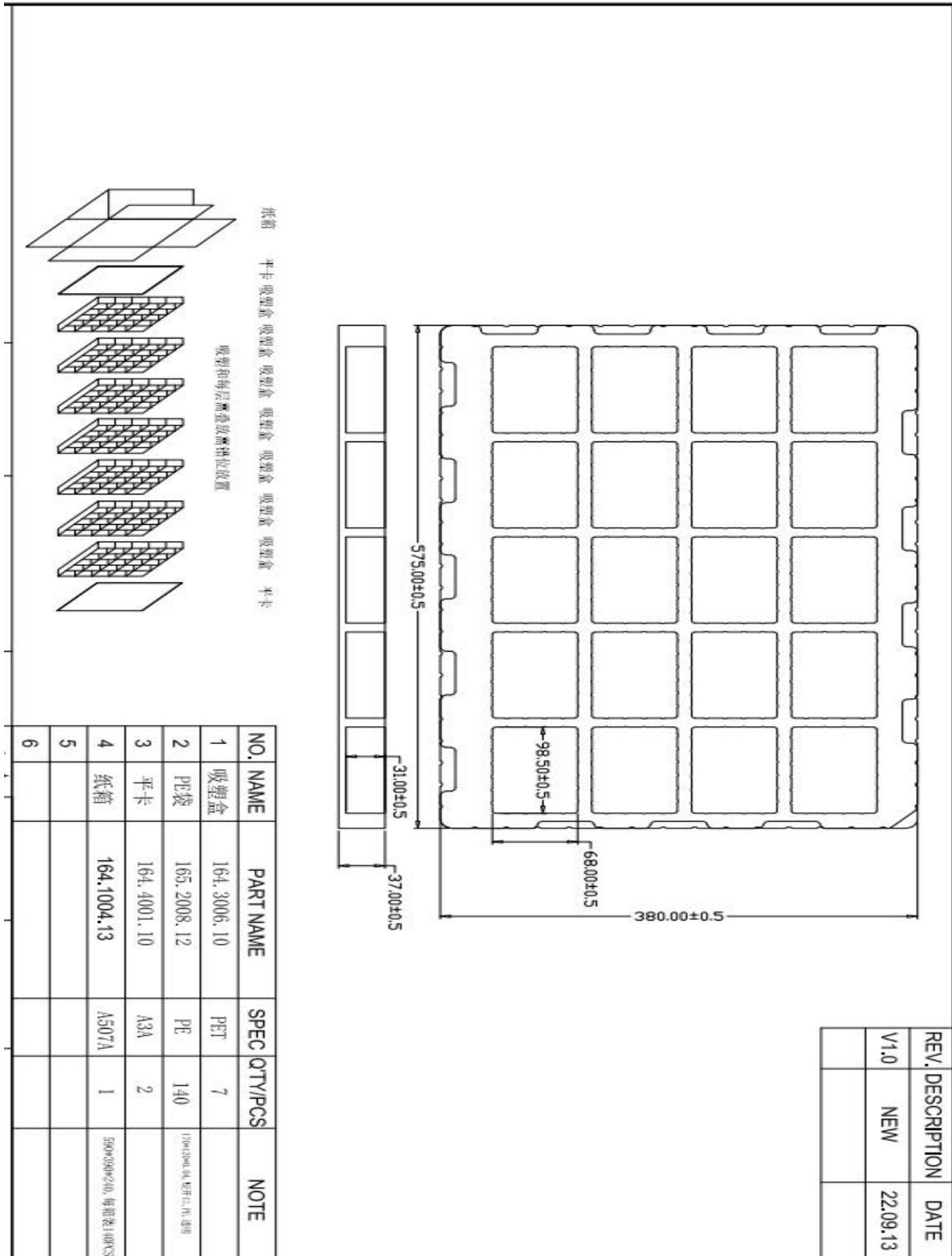
Scale: 2X

工艺：镭雕

颜色：PANTONE COOL GREY 6U

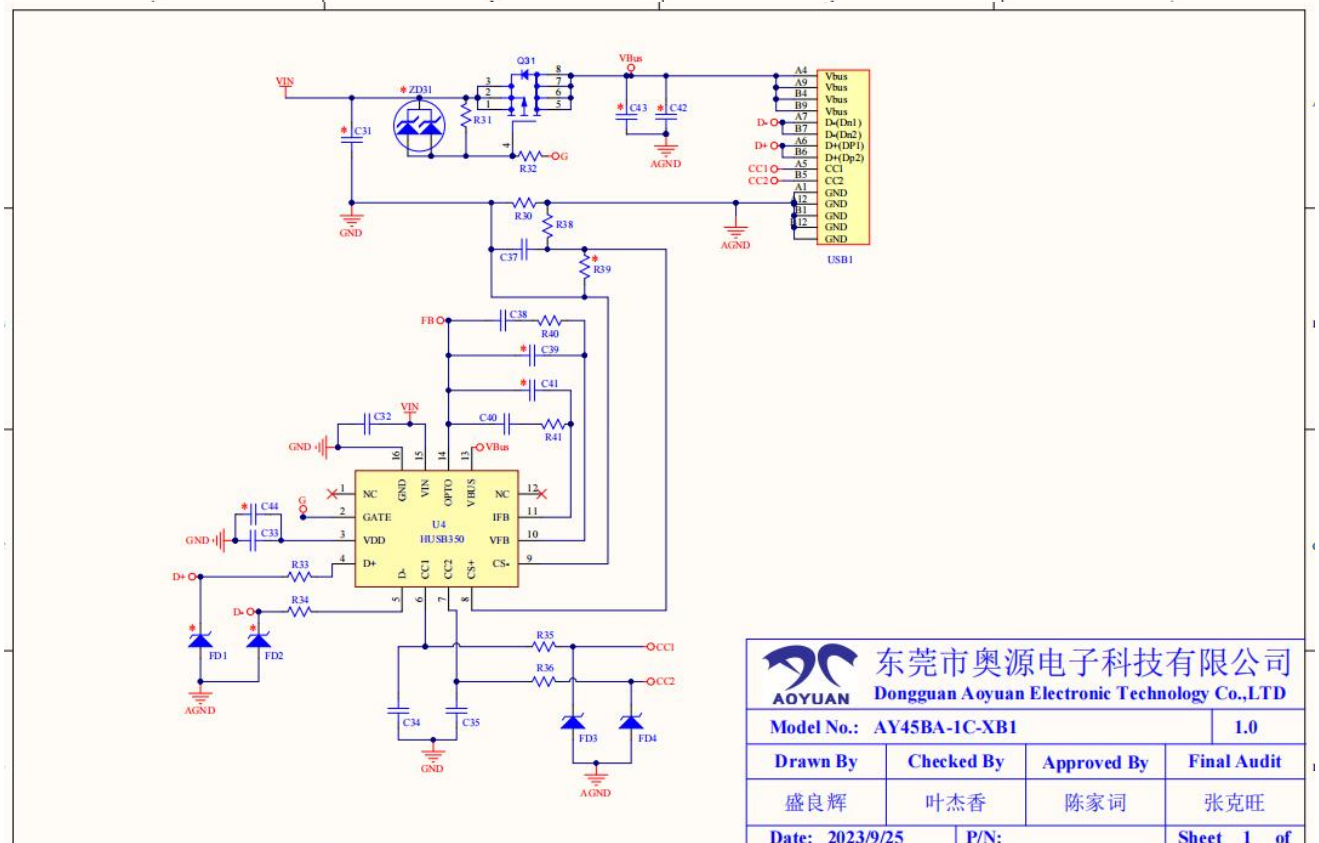
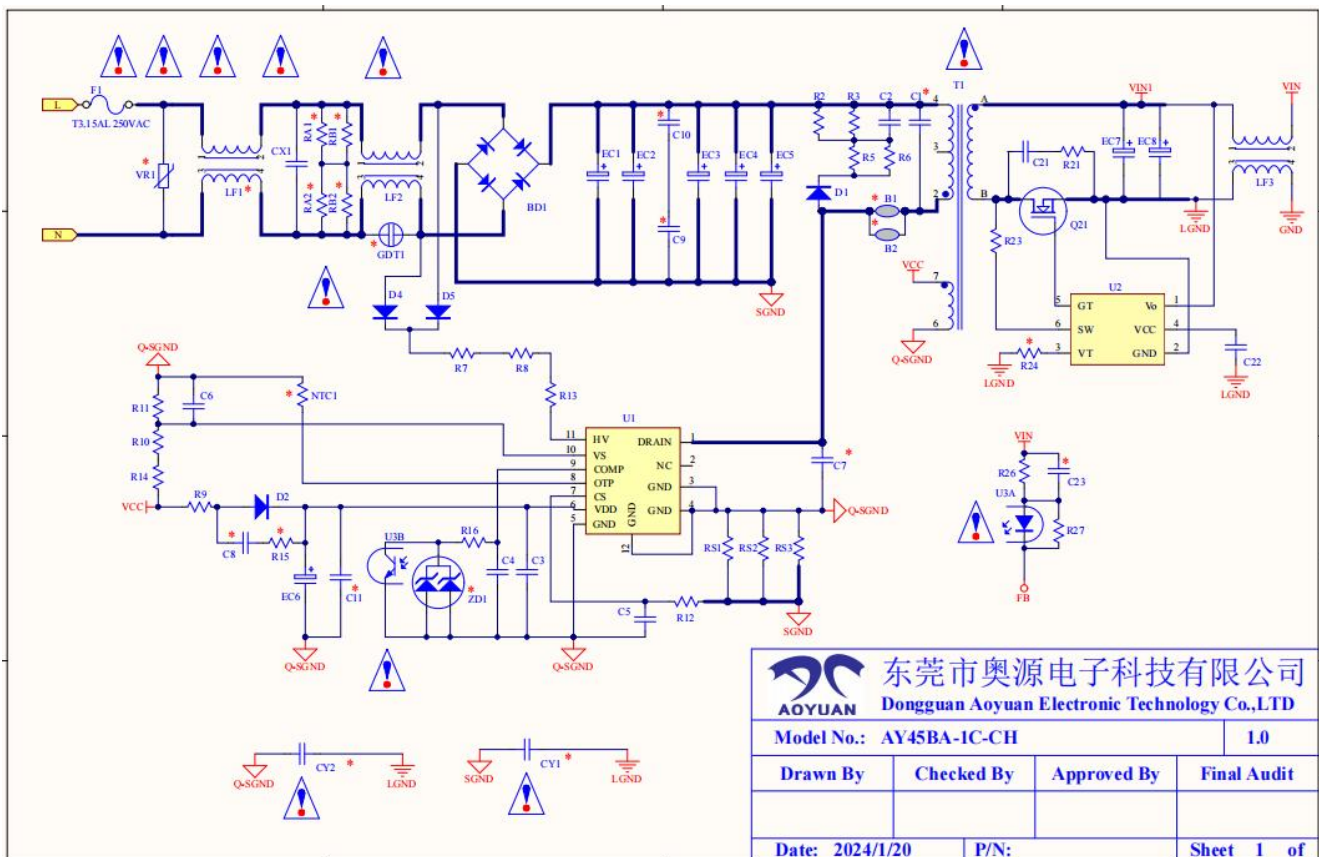
7.6 Package/包装

This package is for reference only/此包装图仅供参考，最终包装方式以客户要求或公司内部确认后为准.

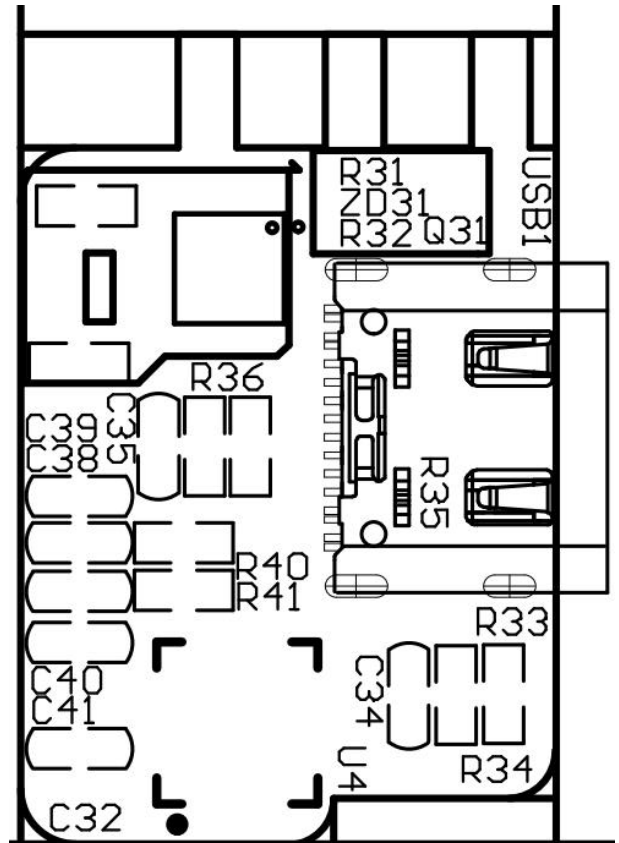
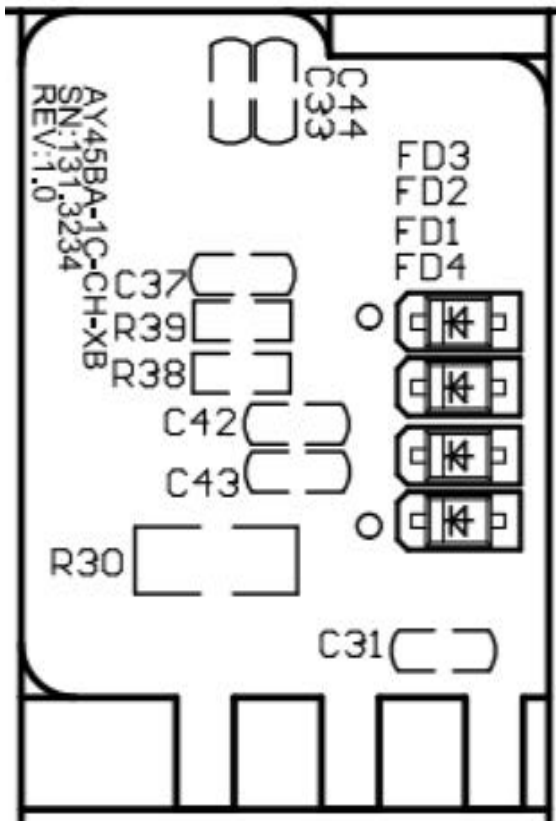
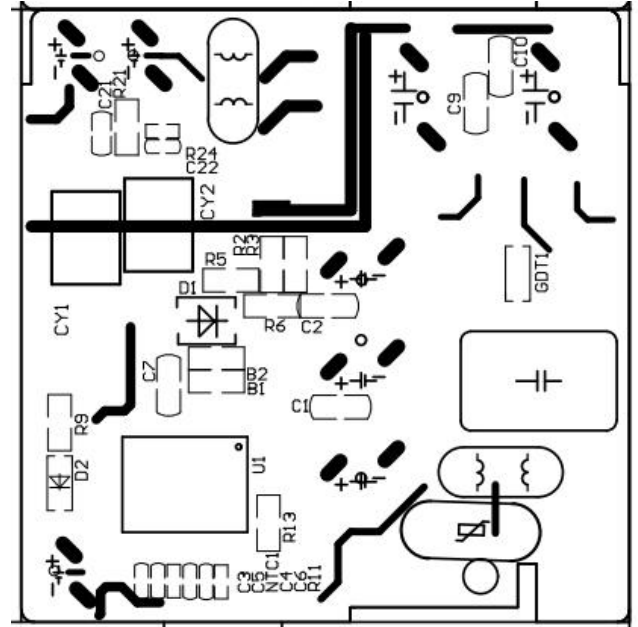
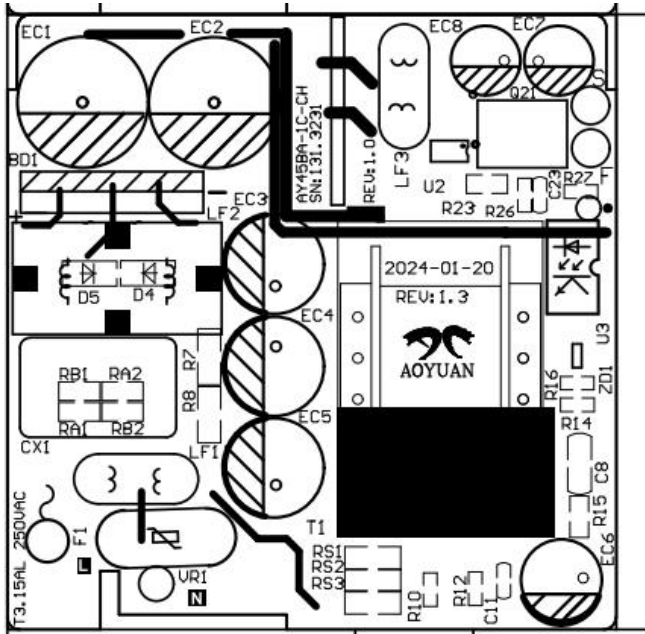


REV.	DESCRIPTION	DATE
V1.0	NEW	22.09.13

7.7 Circuit Drawing/原理图



7.8 PCB Drawing/PCB 绘图



7.9 Bill of materials/材料清单

序号	替代关系	元件位号	用量	料号	品名	规格	品牌
1	主	U1	1	111. 1224. 50	IC	JW15158KESOPAX, SMD, ESOP10	JW
2	主	U2	1	111. 7009. 50	IC	JW7726BHS0TB, SMD, SOT23-6	JW
3	主	Q21	1	115. 2065. 69	QFN-M-NMOS	77A, 100V, 8. 2mΩ, N-MOSFET, SMD, DFN56, JMSL1009PG	JIEJIE
	替			115. 2065. 69	QFN-M-NMOS	75A, 100V, 9. 2mΩ, N-MOSFET, SMD, DFN56, JMGG088V10A	JIEJIE
	替			115. 2065. 05	QFN-M-NMOS	53A, 100V, 7. 4mΩ, N-MOSFET, SMD, PDFN56, MDU10N070	MagnaChip
	备			115. 2065. 26	QFN-M-NMOS	100A, 100V, 4. 8mΩ, N-MOSFET, SMD, AP10TN004CMT	APEC
4	主	D2	1	112. 1031. 67	快速二极管	1A, 1000V, FAST DIODE, SMD, SOD-123, GPP, RS07M	PingWei
	替			112. 1031. 12	快速二极管	1A, 1000V, FAST DIODE, SMD, SOD-123, DFR1M	PANJIT
5	主	D4. D5	2	112. 1009. 67	高压二极管	1A, 1000V, SWITCH DIODE, SMD, SOD-123, GPP, S07M	PingWei
	替			112. 1009. C3	高压二极管	1A, 1000V, SWITCH DIODE, SMD, SOD-123, GPP, G1M	YangJie
	备			112. 1009. 11	高压二极管	1A, 1000V, SWITCH DIODE, SMD, SOD-123, GPP, F7AAG	GOOD-ARK
6	主	U3	1	117. 1001. 09	光耦	OPTO COUPLE, SMD, LTV-1009-TP1-G	LITE-ON
	替			117. 1001. 02	光耦	OPTO COUPLE, SMD, EL1019	EVERLIGHT
7	主	D1	1	112. 1014. 67	高压二极管	3A, 1000V, SWITCH DIODE, SMD, SMB, GPP, GS3MBF	PingWei
	替			112. 1014. 11	高压二极管	3A, 1000V, SWITCH DIODE, SMD, SMB, GPP, GN3MB	GOOD-ARK
	备			112. 1014. C3	高压二极管	3A, 1000V, SWITCH DIODE, SMD, SMB, GPP, GS3MB	YangJie
8	主	ZD1	1	112. 4017. 00	稳压二极管	22V, 0. 225W, ZENER DIODE, SMD, SOT-23	Galaxy/CJ/LRC
9	主	CY1. CY2	2	124. 2022. 58	贴片 Y1 电容	102, 400VAC, M, Y5U, Y1-CAP, SMD	TRX

10	主	EC6	1	124. 3301. 32	普通电解	22uF, 100V, 6000Hrs, E-CAP, 6. 3*11	ChengX
	替			124. 3301. 14	普通电解	22uF, 100V, 6000Hrs, E-CAP, 6. 3*11	HuaWei
	备			124. 3301. 08	普通电解	22uF, 100V, 6000Hrs, E-CAP, 6. 3*11	CAPXON
11	主	EC7. EC8	2	124. 4035. 32	固态电解	560uF, 25V, 2000Hrs, E-CAP, 5. 5*16	ChengX
	替			124. 4035. 14	固态电解	560uF, 25V, 2000Hrs, E-CAP, 5. 5*16	HuaWei
	备			124. 4035. 08	固态电解	560uF, 25V, 2000Hrs, E-CAP, 5. 5*16	CAPXON
12	主	EC1, EC2	2	124. 3375. 32	普通电解	18uF, 450V, 2000Hrs, E-CAP, 10*17	ChengX
	替			124. 3375. 14	普通电解	18uF, 450V, 2000Hrs, E-CAP, 10*17	HuaWei
	备			124. 3375. 08	普通电解	18uF, 450V, 2000Hrs, E-CAP, 10*17	CAPXON
13	主	U4	1	111. 5057. B1	IC	HUSB3500-A450B, SMD, QFN-16	Hynetek
14	主	USB1	1	132. 5004. 82	USB 插座	16PIN, 8. 94*7. 35*3. 26, USB-CN, Black, SMD-(V), TYPE C	BBJCONN
	替			132. 5004. 55	USB 插座	16PIN, 8. 94*7. 35*3. 26, USB-CN, Black, SMD-(V), TYPE C	HongSen
15	主	Q31	1	115. 1004. 69	L-PMOS	-35A, -30V, 11m Ω, P-MOSFET, SMD, PDFN3. 3*3. 3, JMTQ4407A	JIEJIE
	替			115. 1004. 10	L-PMOS	-42. 6A, -30V, 13m Ω, P-MOSFET, SMD, PDFN3. 3*3. 3, ME7423S-G	MEAT
16	主	ZD31	1	112. 4012. 00	稳压二极管	15V, 0. 225W, ZENER DIODE, SMD, SOT-23	Galaxy/CJ/LRC
17	主	FD1, FD2, FD3, FD4	4	112. 4038. 00	稳压二极管	6. 2V, 0. 2W, ZENER DIODE, SMD, SOD-323	Galaxy/CJ/LRC
18	主	EC3. EC4, EC5	3	124. 3376. 32	普通电解	12uF, 450V, 2000Hrs, E-CAP, 8*17	ChengX
	替			124. 3376. 14	普通电解	12uF, 450V, 2000Hrs, E-CAP, 8*17	HuaWei
	备			124. 3376. 08	普通电解	12uF, 450V, 2000Hrs, E-CAP, 8*17	CAPXON

19	主	T1	1	181. 9016. 10	手动变压器	ATQ2516, L=560uH	AOYUAN
20	主	F1	1	134. 2013. 52	保险丝	3. 15A, 250V, 4T, Fuse	XC
	替			134. 2013. 03	保险丝	3. 15A, 250V, 334, Fuse	Bettel
	备			134. 2013. 02	保险丝	3. 15A, 250V, 334, Fuse	Walter
21	主	BD1	1	116. 2006. 67	桥式整流管	4A, 800V, BRIDGE, 扁脚, 有螺丝孔, P3. 8, D4KB8	PingWei
	替			116. 2006. 09	桥式整流管	4A, 800V, BRIDGE, 扁脚, 有螺丝孔, P3. 8, GBP408	LITE-ON
	备			116. 2006. 12	桥式整流管	4A, 800V, BRIDGE, 扁脚, 有螺丝孔, P3. 8, DK408	PANJIT
22	主	LF2	1	182. 2032. 10	方形电感	SQ1412, L=30mH MIN	AOYUAN
23	主	CX1	1	124. 1037. 02	X 电容	474, 275VAC, PH10	UTX
	替			124. 1037. 65	X 电容	474, 310VAC, PH10	WEIQING
	备			124. 1037. 59	X 电容	474, 275VAC, PH10	SCE
24	主	VR1	1	123. 2009. 55	压敏电阻	420VAC, 560VDC, VR, HEL10D681K	Hongzhi
	替			123. 2009. 33	压敏电阻	420VAC, 560VDC, VR, HVR10D681KSCABS	ZhiMin
	备			123. 2009. 09	压敏电阻	420VAC, 560VDC, VR, TVR10681KSY	TKS
25	主	LF1. LF3	2	182. 3007. 10	环形电感	T9*5*3, L=220uH,	AOYUAN