

参考规格书

SPECIFICATION FOR REFERENCE

CUSTOMER: 客 户:	平台产品
CUSTOMER P.N.: 客户料号:	
MODEL NO.: 产品型号:	P40-V5000U200-100L0-US
PRODUCT NO.: 产品编号:	SDXXX-U0
SAMPLE DATE: 送样日期:	2026-03-12

CUSTOMER AUTHORIZED SIGNATURE 客户承认签核		

Please return to us one copy of "SPECIFICATION FOR APPROVAL"
with you approved signature.

客户确认签字，盖章后请回传一份承认书给我司。

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MANUFACTURER AUTOGRAPH 制造商签名			
Reviser 修订	Confirm 确认	Checked 审查	Approval 批准

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1. SCOPE/简述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 100W continuous output power.

资料详细描述了一款 **100W** 连续输出功率开关电源的电气性,结构性及环境等要求.

The power supply shall meet the HSF requirement.

此款电源符合 **HSF** 要求.

1.1.Supports fast charge protocol

PD2.0/PD3.0/PPS

QC2.0/QC3.0/ QC3.0+

SCP

FCP

AFC

BC1.2 DCP

PE+1.1/2.0

APPLE 2.4A

1.2.Description /类型

SMPS Adaptor(Wall mount)/插墙式适配器

Open Frame/开放式结构

PD ADAPTER (Wall mount)/PD 插墙式

SMPS Adaptor(Desk-top)/桌面型适配器

SMPS Unit (With Case)/带铁壳型

Others/其他

1.3.Green Requirements/环保要求

RoHS:2011/65/EU & (EU) 2015/863;

REACH:1907/2006/EC;

Halogen-free:IEC 61249-2-21;

CA Prop 65;

POPs:(EU)2023/1608;

PAHs: 2005/69/EC;

Packaging Directive:94/62/EC;

US EPA Toxic Substances Control Act (TSCA);

MOSO Environmental standards: WI-QM006-G;

Others

2. Input Characteristics/输入特性

2.1. Input Voltage & Frequency/输入电压与频率

The range of input voltage is from 90vac to 264Vac single phase.

输入电压范围: 从 90Vac 到 264Vac, 单相输入.

	Minimum/最小	Nominal/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100Vac-240Vac	264Vac
Input Frequency/输入频率	47Hz	50Hz /60Hz	63Hz

2.2. Input AC Current/AC 输入电流

1.5A max. @ 100-240Vac input & Full load

输入电压 100-240Vac 满载时, 输入电流不超过 1.5A。

2.3. Inrush Current /浪涌电流

264Vac (cold/hot start) no damage, meet fuse and diode bridge I²t derating.

在 264Vac 冷/热开机的情况下产品无异常, 满足保险丝和桥堆的降额要求。

2.4. Averaged Efficiency/平均效率(MEET DOE VI + COC V5 Tier2)

The average efficiency shall meet DOE-VI COC Tier 2 requirement at the rated input voltages of 115Vac/230Vac under room temperature after aging 30 minutes(load setting:25%,50%,75% and 100%)and10% Load efficiency .

在 30 分钟老化后室温下的额定输入电 115Vac/230Vac 的平均效率应达到 DOE-VI 和 COCTier2 要求平均效率(负载设置:25%.50%.75%.100%)和 10%效率。

The output	DOE VI	COC V5 Tier2	
	Average Efficiency	Average Efficiency	10% Load Efficiency
5V	≥81.39%	≥81.84%	≥72.48%
9V	≥86.62%	≥87.3%	≥77.3%
12V	≥87.4%	≥88.3%	≥78.3%
15V	≥87.73%	≥88.85%	≥78.55%
20V	≥88%	≥89%	≥79%

2.5. Energy Consumption /空载功耗

Input Voltage 115Vac 60Hz/230Vac 50Hz ,The No load Consumption ≤75mW

在输入电压 115Vac 和 230Vac 时,空载功耗均小于 75mW.

3. Output Characteristics/输出特性

3.1. Static Output Characteristics <Vo & R+N>/静态输出特性

Output Rate	Rated Load/额定负载		Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load			
5.00V	0.0A	3.0A	4.5-5.5V	200mVp-p	
9.00V	0.0A	3.0A	8.55-9.45V	200mVp-p	
12.00V	0.0A	3.0A	11.40-12.60V	200mVp-p	
15.00V	0.0A	3.0A	14.25-15.75V	200mVp-p	
20.00V	0.0A	5.0A	19.00-21.00V	200mVp-p	

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (test under the condition of rated input and rated output)

纹波与噪声: 测量时, 示波器选用 20MHz 带宽限制, 输出端要并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容. (在额定输入及输出的条件下检测)

3.2. Line/ Load Regulation/线性/负载调整率

Output Rate	Load Condition/负载条件		Line Regulation 线性调整率	Load Regulation 负载调整率	Remark 备注
	Min. Load	Max. Load			
5.00V	0.0A	3.0A	± 5%	± 10%	
9.00V	0.0A	3.0A	± 5%	± 5%	
12.00V	0.0A	3.0A	± 5%	± 5%	
15.00V	0.0A	3.0A	± 5%	± 5%	
20.00V	0.0A	5.0A	± 5%	± 5%	

3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 230Vac output 5V input & Full load.

输入电压 230Vac 输出 5V 满载时, 开机延迟时间不超过 3S。

3.4. Hold-up Time/关机维持时间

5mS min. @ Full load 100-240Vac/50Hz input turn off at the worst case.

输入电压 100-240Vac/50Hz 满载时, 关机时间最差情况不小于 5mS。

3.5. Rise Time/上升时间

40mS max. @ Full load

满载时, 上升时间不超过 40mS。

3.6. Fall Time/下降时间

40mS max. @ Full load

满载时, 下降时间不超过 40mS。

3.7. Output Overshoot / Undershoot/输出过冲/欠冲

10% max. When the power on or off, when it is the full input voltage and full load.

开关机时, 输出过冲/欠冲均不大于 10%。

3.8.Dynamic load change response/动态负载变化响应

Output voltage for load step from 20% to 80%, R/S: 0.5A/uS,
Frequency: 100Hz duration and 8mS at 80%.

5V: 4.5-5.5V

9V: 8.55-9.45V

12V: 11.40-12.60V

15V: 14.25-15.75V

20V:19V-21V

输出电压负载从 20%到 80%，斜率 0.5A/uS,频率: 100Hz. 80%负载持续时间为 8mS.

4. Protection Requirements/保护要求

4.1.Over Current Protection/过流保护

Over current protection is included into construction of the charger, Maximum over current shall be follow below requirement. (Auto)

电流保护包括在充电器的结构中。最大过电流应按以下要求进行:

Output Rate	OCP MAX
5V3A	3.9A
9V3A	3.9A
12V3A	3.9A
15V3A	3.9A
20V5A	6.5A

The charger shall auto restart and no damage after remove OCP test.

充电器在过流状态解除后能重新恢复正常正作且不会损坏。(自恢复)

4.2.Short Circuit Protection/短路保护

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed.

当输出短路时, 输入功率应减小, 电源应无损坏, 并且当故障条件消除后,电源应可自动恢复。

4.3.Over Voltage Protection/过压保护

Output voltage protection range is shall be follow below requirement.The output shall be protected atover-voltage condition.when over pressure condition removed can return to normal working condition.

输出电压保护范围应符合以下要求, 输出应保护在过电压条件下。当过压状况移除后能恢复到正常工作状态。

Output Rate	OVP MAX
5V3A	7.5V
9V3A	13.5V
12V3A	18V
15V3A	22.5V

20V5A

26V

5. Environment Requirements/环境要求

5.1. Operating Temperature and Relative Humidity/操作温/湿度要求

0°C to +40°C

10%RH to 90%RH

温度 0°C to +40°C, 湿度 10%RH to 90%RH。

5.2. Storage Temperature and Relative Humidity/存储温/湿度要求

-40°C to +80°C

5%RH to 95%RH non-condensing

温度 -40°C to +80°C, 湿度 5%RH to 95%RH。

5.3. Vibration/振动

10 to 300Hz sweep at a constant acceleration of 1.0G (Breadth: 3.5mm) for 1 Hour for each of the perpendicular axes X, Y, Z.

扫描频率: 10 to 300Hz, 恒定加速度: 1.0G (位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时。

5.4. Drop Test/跌落

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, and the hardwood should be put on the base of the cement or on the ground without flexibility. Apply one times on all surfaces, total 6 times. The electric performance and Hi-Pot test must be OK after the drop tests.

跌落高度: 1 米, 并跌落到厚度为 20mm 的硬木上, 且硬木应放在水泥基座或等同的无弹性地面上, 6 个面, 每面各 1 次, 在跌落后电气性能及高压测试 OK。

6. Reliability Requirements/可靠性要求

6.1. Burn-in/老化

The power supply shall be burn-in for 2 Hours under AC220V input and full load at 35°C ± 5°C. the electric performance and Hi-Pot test must be OK.

35°C ± 5°C, 电源在 220V 输入电压和满载条件下老化 2 小时后, 电气性能及高压测试 OK。

6.2. MTBF Qualification/平均间隔故障时间估算

The MTBF of power supply shall be over than 50,000 Hours @ 25°C 100% load with

平均间隔故障时间: 在 25°C, 额定输入与满载条件下, 至少工作 50,000 小时。

6.3. Case temperature rise/外壳温升

Input voltage : 115Vac or 230Vac, full load output. The ambient temperature is 25°C and the temperature rise of the shell is less than 45°C.

输入电压: 115Vac 或 230Vac, 输出满载, 环境温度 25°C, 外壳温升小于 45°C。

7. EMI/EMS Standards/EMI/EMS 标准

7.1.EMI Standards/EMI 标准

FCC Part15 , CLASS B

7.2. EMS Standards/EMS 标准

7.2.1 EN 61000-4-2,electrostatic discharge(ESD) requirement/静电抗扰度要求

Discharge characteristic/静电规格	Test level/测试条件	judgment criteria/评定标准
Air discharge/空气放电	+/-15KV	B
Contact discharge/接触放电	+/-8KV	B

7.2.2 EN 61000-4-3, radiated electromagnetic field susceptibility(rs)/辐射骚扰场强

Test level/测试条件	judgment criteria/评定标准
3V/m (r.m.s)	A
80-1000MHz,80%AM(1KHz) sine-wave	

7.2.3 EN 61000-4-4,electric fast transients(burst) immunity requirement/电快速瞬变脉冲群

Coupling/测试端口	Test level/测试条件	judgment criteria/评定标准
AC-input/交流输入	0.5KV	B
AC-input/交流输入	1KV	B

7.2.4 EN 61000-4-5,surge capability requirement/浪涌抗扰度要求

Surge voltage/雷击电压	judgment criteria/评定标准
Common mode/共模 +/-2KV	B
Differential mode/差模 +/-1KV	

7.2.5 EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity requirement/电源端子传导骚扰实验

Test level/测试条件	judgment criteria/评定标准
3V	A
0.15-80 MHz,80%AM(1KHz)	

7.2.6 Assessment criteria /评估标准

Acceptance criteria 可接受标准	Performance 性能
A	Agreed operational behavior within the specified limits 性能不允许变化; 如果性能会发生变化, 则变化的范围在产品规格书规定的范围内.
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests. 设备在测试过程中, 性能降低允许在产品规格书要求范围内, 干扰消除后, 设备能恢复正常, 不允许出现复位和任何方式的人工干预.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention. 在测试过程中, 设备允许出现业务中断, 测试完毕后允许自行恢复或者人工干预恢复(包括硬件上干预); 测试中只允许初级防护器件损坏, 并且更换损坏的初级防护器件后, 设备能恢复正常

8. Safety Standards/安规标准

8.1.Dielectric Strength(Hi-pot)/介电耐压强度(高压)

Primary to Secondary: 3000Vac /10mA max. / 60S (when safety testing).

初级对次级: 3000Vac / 10mA max. / 60 秒 (安规试验) .

Primary to Secondary: 3300Vac /5mA max. / 3S (when production).

初级对次级: 3300Vac / 5mA max. /3S(生产作业).

8.2.Leakage Current/漏电流

0.25mA max. at 264Vac / 60Hz.

8.3.Insulation Resistance/绝缘阻抗

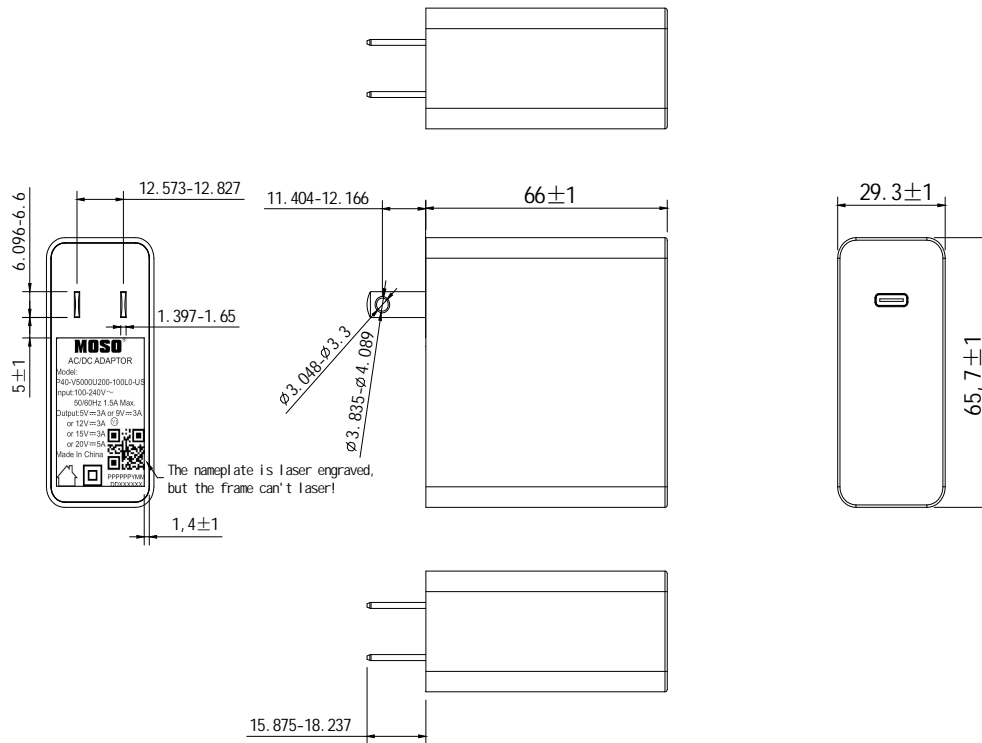
100MΩ min. at primary to secondary add 500Vdc/1min test voltage

在初级与次级间加 500Vdc/1min 进行测试, 绝缘阻抗: 正常大气下 100MΩ, 湿热条件下 10 MΩ.

8.4.Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	Note/备注
UL	USA	UL62368-1	MEET	

9. Mechanical Outline Drawing/外观示意图



Unit:mm
Other Tolerance: ± 0.5

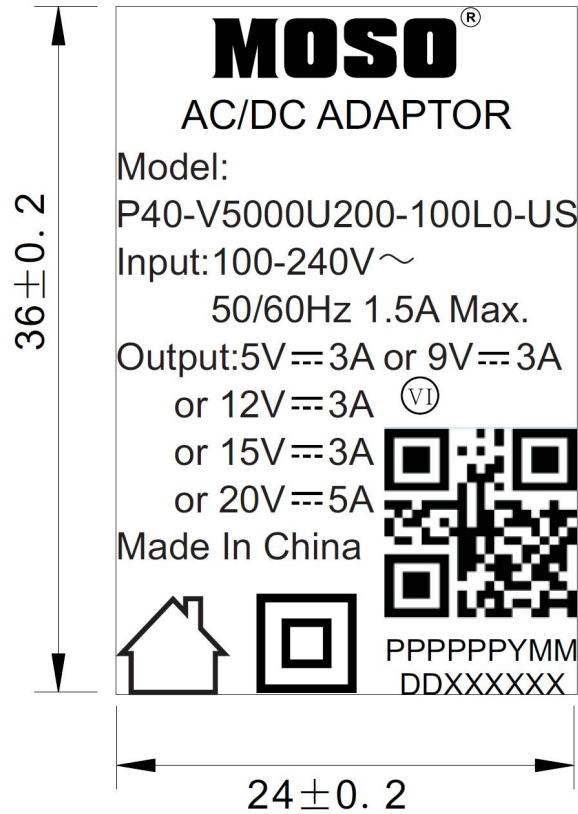
外壳材质: ■PC 耐温: 120°C

□PC+ABS 耐温: 95°C

备注: 1) PC 材料符合球压试验要求。

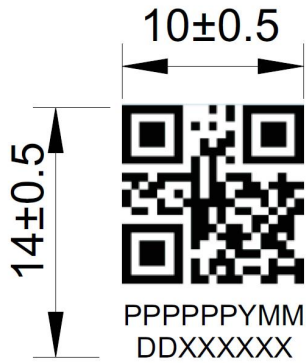
2) 外壳的颜色是白色的。

10. I/O Marking Drawing/铭牌示意图



Remark:

1. Above label is laser engraved.
2. The height dimension of double insulation mark can NOT less than 5mm.



下方内容与二维码居中
字体Arial

二维码格式/Code format: QR code

二维码尺寸/Code size :10*10mm(±0.2)

二维码扫描内容/Code content:PPPPPYMMDDXXXXXX 总共17位/17digits in total

二维码解析如下/Code analysis:

PPPPPP:product code(产品编码:实际S编码后六位,如SD598-U0,取D598U0)

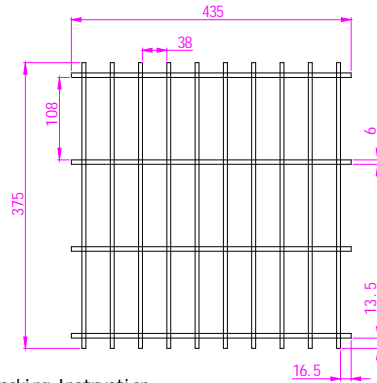
Y:producing year(产品实际生产年份,年份最后一位,如2026年,取6)

MM:producing month(产品实际生产月份,如02月,取02)

DD:producing date(产品实际生产日期,如15日,取15)

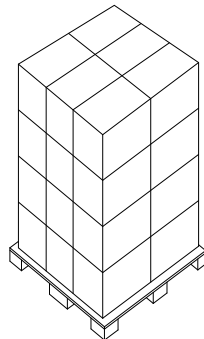
XXXXXX:product listing number(产品序列号,000001-999999)

11. Package Drawing/包装示意图

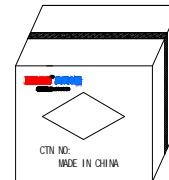
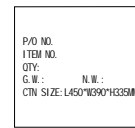
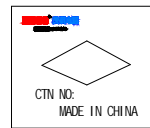
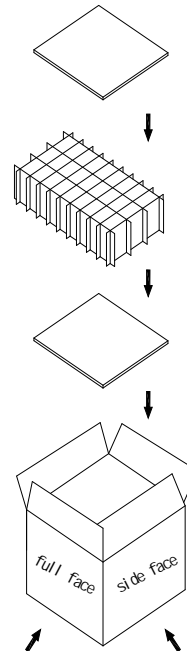


Packing Instruction:

- I. the packing product
put in the partitioning card groove, 27PCS/floor,
4 floors in all, 108PCS/box
such as: 27pcs/floor*4floor=108 PCS/box
- II. the usage of the packing material:
 1. the usage of the ten partitioning card 435*375*75: 4PCS
 2. the usage of the flat 435*375: 5PCS
 3. The usage of the bag : 108PCS
 4. carton box 450*390*335: 1PCS
- III. Pallet stacke instruction:
 1. Pallet size is: L1200*W950*H135mm
 2. per floor set 6pcs
 3. stack per 3floor*6pcs carton
total 18 pcs carton

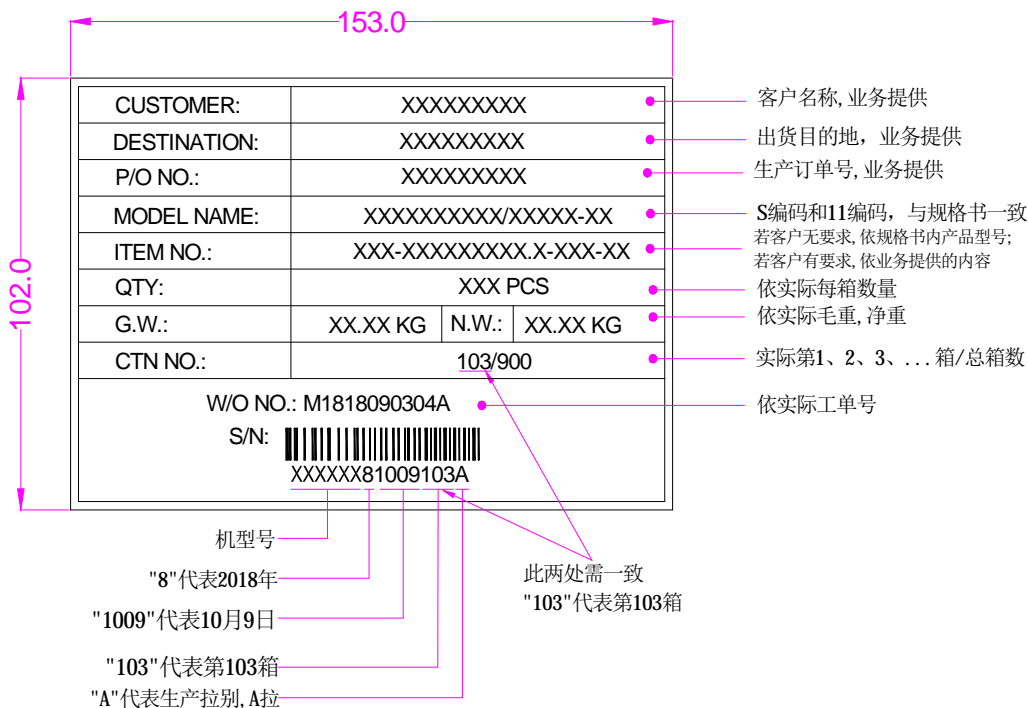


The pallet stack drawing



The product will be packed in the carton box and the box will be sealed by the sticker

Carton label



技术要求:

1. 材质: 80P铜版纸(来料为空白标签)
2. 颜色: 白底黑字, 公司内部打印
3. 背附胶, 粘贴在纸箱上后, 无翘边等不良;
4. 符合ROHS标准及茂硕环保要求
5. 使用空白料号3230200011