

# 参考规格书

## SPECIFICATION FOR REFERENCE

<b>CUSTOMER:</b> 客 户:	
<b>CUSTOMER P.N.:</b> 客户料号:	
<b>MODEL NO.:</b> 产品型号:	V40-Z5360R560-300C0-Q
<b>PRODUCT NO.:</b> 产品编号:	SDXXX-Q0
<b>SAMPLE DATE:</b> 送样日期:	2025-05-22

<b>CUSTOMER AUTHORIZED SIGNATURE</b> 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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Reviser 修订	Confirm 确认	Checked 审查	Approval 批准



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## 1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 300W continuous output power.

资料详细描述了一款 300 W (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. Description /类型

- SMPS Adaptor(Wall mount)/插墙式适配器       SMPS Adaptor(Desk-top)/桌面型适配器  
 Open Frame/开放式结构       SMPS Unit (With Case)/带铁壳型  
 Others/其他

### 1.2. 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

### 1.3. Energy Efficiency Requirements/能效要求

No.	Country/国家地区	Energy efficiency abbreviation/能效简称	Whether it meets the requirements/是否符合(YES/是 <input checked="" type="checkbox"/> , NO/否 <input type="checkbox"/> )
1	USA/美国	DoE VI	<input checked="" type="checkbox"/>
2		CEC	<input type="checkbox"/>
3	Canada/加拿大	NRCAN	<input type="checkbox"/>
4	Australia/New Zealand/ 澳大利亚/新西兰	GEMS	<input type="checkbox"/>
5	Europe/欧盟	Erp VI	<input type="checkbox"/>
6		CoC V5 Tier 2	<input type="checkbox"/>
7	South Korea/韩国	KMEPS	<input type="checkbox"/>
8	Mexico/墨西哥	MEPS	<input type="checkbox"/>
9	Byelorussia/白俄罗斯	MEPS	<input type="checkbox"/>

## 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	100 Vac~ 240 Vac	264Vac
Input Frequency/输入频率	47 Hz	60 Hz/ 50Hz	63Hz

### 2.2. Input AC Current/AC 输入电流

5.0A max. @ 100-240Vac input & Full load.

输入电压 **100-240Vac** 满载时, 输入电流不超过 **5.0A**。

### 2.3. Inrush Current (cold start)/浪涌电流(冷启动)

150A max. @ 230Vac input

输入电压 **230Vac** 时, 浪涌电流不超过 **150A**。

### 2.4. Averaged Efficiency/平均效率

89% min. @230Vac/50Hz input (@25%, 50%, 75% and 100% of max load)

输入电压 **230V/50Hz** 时, **25%、50%、75%和 100%**载时的平均效率不低于 **89%**

### 2.5. Energy Consumption /空载功耗

No load Consumption  $\leq 0.5W$  (230Vac/50Hz).

在额定输入 **230Vac/50Hz** 时,空载功耗 $\leq 0.5W$ 。

## 3. Output Characteristics/输出特性

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

Output	Rated Load/额定负载		Output Range	R+N	Remark
Rate	Min. Load	Rate.Load	输出电压范围	纹波与噪声	备注
+56V	0.0A	5.36A	53.2V~ 58.8V	560mVp-p	115-230V

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor. (test under the condition of rated input and rated output).

纹波与噪声: 量测时示波器选用 **20MHz** 带宽限制,输出端要并联一颗 **0.1uF** 的陶瓷电容和一颗 **47uF** 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	Load Condition/负载条件		Line Regulation	Load Regulation	Remark
Rate	Min. Load	Rate.Load	线性调整率	负载调整率	备注
+56V	0.0A	5.36A	$\pm 3\%$	$\pm 5\%$	

### 3.3. Turn - on Delay Time/开机延迟时间

3S max. @115Vac to 230Vac input & Full load.

输入电压 **115Vac to 230Vac** 满载时, 开机延迟时间不超过 **3S**。

### 3.4. Hold-up Time/关机维持时间

10mS min. @ Full load &115Vac/60Hz input turn off at worst case

输入电压 **115Vac/60Hz** 满载时, 关机时间最差情况不小于 **10 毫秒**。

20mS min. @ Full load &230Vac/50Hz input turn off at worst case

输入电压 **230Vac/50Hz** 满载时, 关机时间最差情况不小于 **20 毫秒**。

### **3.5. Rise Time/上升时间**

100 mS max. @ Rated load.

额定负载时, 上升时间不超过 **100 毫秒**。

### **3.6. Fall Time/下降时间**

100 mS max. @ Full load.

满载时, 下降时间不超过 **100 毫秒**。

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

5% 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 **5%**。

### **3.8. Output Load Transient Response/输出负载瞬态响应**

Output voltage within 53.2V~58.8V for load step from 25% to 50% to 25%,50% to 75% to 50% R/S: 0.25A/uS, Transient Response Recovery Time :200uS, Dynamic response overshoot  $\pm 5\%$ .

输出电压在 **53.2V~58.8V** 之间,负载变化: 从 **25% to 50% to 25%, 50% to 75% to 50%**斜率: **0.25A/uS**,  
动态响应恢复时间: **200uS**, 动态响应过冲 $\pm 5\%$ 。

## **4. Protection Requirements/保护要求**

### **4.1. Over Current Protection/过流保护**

Over Current Point Limited/过流点限制: 6.5A-10.7A(100-240Vac)

The output shall hiccup when the over current applied to the output rail, and shall be auto-recovery when the fault condition is removed.

当过电流时,输出将进入打嗝模式,当过流情况解除后,产品将会自动恢复正常。

### **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 auto-recovery when the fault condition is removed.

当输出短路时,产品输入功率降低且不会损伤,当短路情况解除后,产品将会自动恢复正常。

### **4.3. Over Voltage Protection/过压保护**

The power supply has to be protected against over voltage conditions. No damage allowed. The power supply must come back to nominal working without on/off powering after removal of the over voltage condition. Maximum output value 84V at In any others conditions (over voltage protection).

当过压保护时,产品输出功率不会损伤,当过压情况解除后,产品恢复正常。过电压保护时,最大输出 **84V**。

## **5. Environment Requirements/环境要求**

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

-5°C~+45°C

5%RH to 95%RH

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

-40°C to +85°C

5%RH to 95%RH non-condensing @ Sea level shall be low 5,000 meters/低于 5,000 米.

## 5.3. Vibration/振动

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

扫描频率: 10 to 300Hz, 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 in/跌落

Height: 0.5m; the product should be fell off on the hardwood floor with the thickness of 20mm, Apply six times on all surfaces, total one time. The electric performance and Hi-Pot test must be OK after the drop tests.

跌落高度:0.5米, 并跌落到厚度为20mm的硬木地板,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/煲机

The power supply shall be burn-in for 4 Hours under normal input and 80% rated load at 35°C ± 5°C , the electric performance and Hi-Pot test must be OK

35°C ± 5°C, 电源在正常输入电压和 80%额定负载条件下老化 4 小时后, 电气性能及高压测试 OK。

### 6.2.MTBF/平均间隔故障时间

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

Test standard: SR-332.

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。测试标准: SR-332.

### 6.3.E-caps lifetime/电容寿命

The E-caps used in this PSU must be with lifetime of 3 years @25°C @100% load@ @115VAC.

25°C环境下, 在 100%负载和 115VAC 输入条件, 电解电容寿命至少达 3 年。

## 7. EMI/EMS Standards/EMI/EMS 标准

### 7.1. EMI Standards/EMI 标准

FCC Part15 EN55032 EN55035

### 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	Test criteria/测试标准
Air discharge/空气放电	+/- 8KV	B
Contact discharge/接触放电	+/- 6KV	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	Test criteria/测试标准
3V/m (r.m.s)	A
80-6000MHz,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	Test criteria/测试标准
AC-input/交流输入	±2KV	B
AC-input/交流输入	±2KV	B

7-2-4 EN 61000-4-5,surge capability requirement/浪涌抗扰度要求

Surge voltage/雷击电压	Test criteria/测试标准
Common mode/共模 +/- 2KV	B
Differential mode/差模 +/-2KV	

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	Test criteria/测试标准
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: 1500Vac / 10mA max. / 60 second.

初级对次级: 1500Vac / 10mA max./ 60 秒(安规试验) .

Primary to Secondary: 1800Vac / 5mA max. / 3 S.

初级对次级: 1800Vac / 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

50MΩ min. at primary to secondary add 500Vdc test voltage. (3S)

在初级与次级间加 500Vdc 进行测试,3S

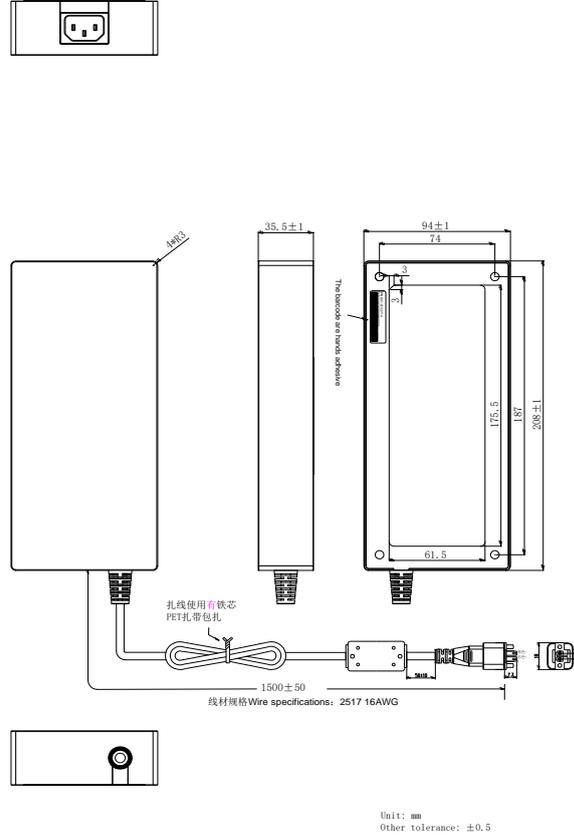
### 8.4. Earthing Resistance/接地阻抗测试

Earthing Resistance: <0.1 Ω at 12VDC/25A/1S.

### 8.5. Regulatory Standards/安规标准

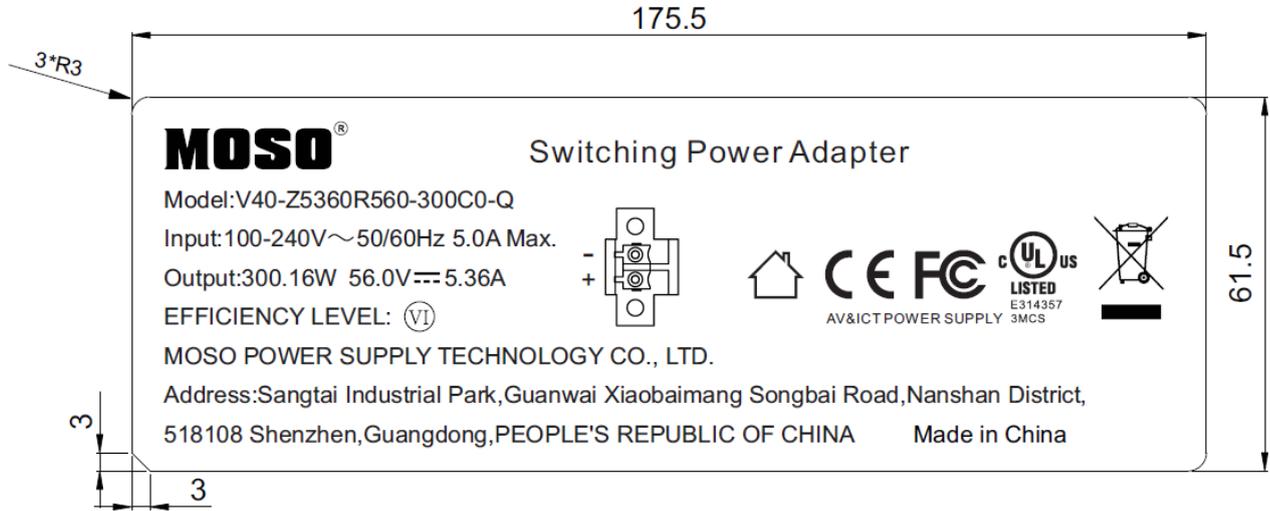
Type/安规	Country/国家	Standard/标准	State/状况	
UL	USA	UL62368-1	APPROVAL	
CE	Europe	EN62368-1	APPROVAL	

## 9. Mechanical Outline Drawing/外观示意图



- 外壳材质:  PC 耐温: 120°C  
 PC+ABS 耐温: 95°C  
 备注: 1)PC 材质符合球压测试要求  
 2)外壳与线材为黑色 (1101M)

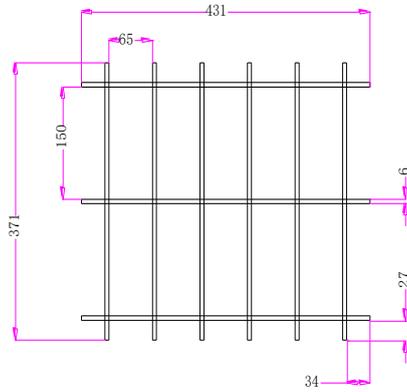
### 10. I/O Marking Drawing/铭牌示意图



#### Remark:

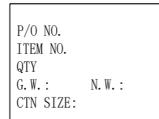
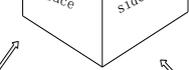
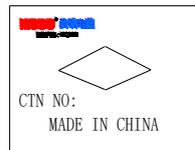
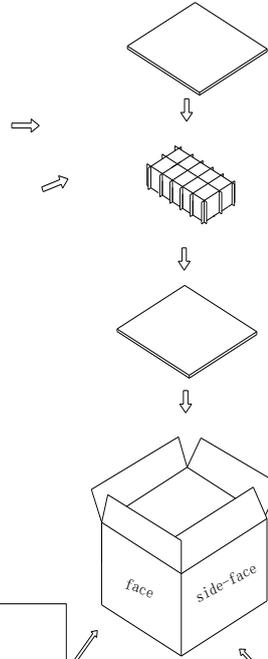
1. Above label is laser engraved.
2. The dimension of garbage bin mark can NOT less than 7mm.

## 11. Package Drawing/包装示意图

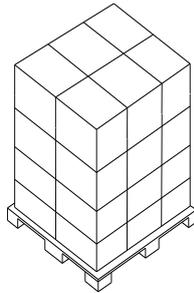


**Packing Instruction:**

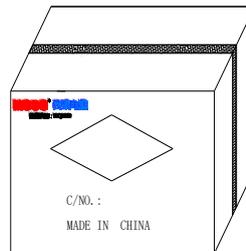
- 1、the product put in the bag , then the packing product put in the partitioning card groove. 10PCS/floor, 1 floors in all, 10PCS/box  
such as: 10pcs/floor\*1floor=10PCS/box
- 2、the usage of the packing materials:
  - 1) the usage of the partitioning card 431\*371\*270: 1PCS
  - 2) the usage of the bag 300\*160mm: 10PCS
  - 3) the usage of the flat 431\*371:2PCS
  - 4) carton box 450\*390\*300: 1PCS
- 3、Pallet stacke instruction:
  - 1) Pallet size is:L1200\*W950\*H135mm
  - 2) per floor set 6pcs
  - 3) stacke per 4floor\*6pcs carton total 24 pcs carton



450\*390\*300MM  
the bag of outside size: 450L\*390W\*300H



The pallet stack drawing



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

- PE 袋包装要求:  PE 袋不用胶带封口;  
 PE 袋用胶带封口;  
 其它要求;

备注:若客户未进行选择 PE 袋包装要求或备注时,  
 我司默认采用 PE 袋不用胶带封口包装方式.