

参考规格书

SPECIFICATION FOR REFERENCE

CUSTOMER: 客 户:	
CUSTOMER P.N.: 客户料号:	
MODEL NO.: 产品型号:	V30-H5000R120-060N0-CN
PRODUCT NO.: 产品编号:	SCXXX-C0
SAMPLE DATE: 送样日期:	2024-07-03

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。

**ADD: MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong
518108, P. R. China**

地址:深圳市南山区茂硕科技园

TEL: 86-755-27657000 27657555

P.C.: 518108

FAX: 86-755-27657908

E-mail:moso@mosopower.com

<http://www.mosopower.com>

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

**** Table Of Content/目录 ****

1. SCOPE/范围	4
1.1. Description /类型	4
1.2. Green Requirements/环保要求	4
1.3. Energy Efficiency Requirements/能效要求	4
2. Input Characteristics/输入特性	5
2.1. Input Voltage & Frequency/输入电压与频率	5
2.2. Input AC Current/AC 输入电流	5
2.3. Inrush Current (cold start)/浪涌电流(冷启动)	5
2.4. Averaged Efficiency /平均效率	5
2.5. Energy Consumption /空载	5
3. Output Characteristics/输出特性	5
3.1. Static Output Characteristics <Vo & R+N>/静态输出特性	5
3.2. Line/ Load Regulation/线性/负载调整率	5
3.3. Turn - on Delay Time/开机延迟时间	5
3.4. Hold-up Time/关机维持时间	5
3.5. Rise Time/上升时间	6
3.6. Output Overshoot / Undershoot/输出过冲/欠冲	6
3.7. Output Load Transient Response/输出负载瞬态响应	6
4. Protection Requirements/保护要求	6
4.1. Over Current Protection/过流保护	6
4.2. Short Circuit Protection/短路保护	6
4.3. Over Voltage Protection/过压保护	6
5. Environment Requirements/环境要求	6
5.1. Operating Temperature and Relative Humidity/操作温/湿度要求	6
5.2. Storage Temperature and Relative Humidity/存储温/湿度要求	6
5.3. 85°C&85%RH Test/双 85 测试	7
5.4. Sea level 5,000 meters/海拔 5,000 米	7
5.5. Vibration/振动	7
5.6. Drop Test/跌落	7
5.7. Waterproof Requirements/防水要求	7
6. Reliability Requirements/可靠性要求	7
6.1. Burn-in/煲机	7
6.2. MTBF/平均失效时间	7
6.3. E-caps lifetime/电解电容寿命	7
6.4. Peak Load/峰值电流	7
6.5. AC PIN residual voltage / AC 插座残压	7

7. EMI/EMS Standards/EMI/EMS 标准	8
7.1. EMI Standards/EMI 标准	8
7.2. EMS Standards/EMS 标准	8
8. Safety Standards/安规标准	9
8.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压).....	9
8.2. Leakage Current/漏电流	9
8.3. Insulation Resistance/绝缘阻抗	9
8.4. Regulatory Standards/安规标准	9
9. Mechanical Outline Drawing/外观示意图	10
10. I/O Marking Drawing/铭牌示意图	11
11. Package Drawing/包装示意图	13

1. SCOPE/范围

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 60W continuous output power.

资料详细描述了一款 **60W(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 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 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 180Vac to 264Vac single phase.

输入电压范围: 从 **180Vac** 到 **264Vac**, 单相输入.

	Minimum/最小	Nominal/额定值	Maximum/最大
Input Voltage/输入电压	180Vac	200Vac~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. @ 200-240Vac input & Full load.

输入电压 **200-240Vac** 满载时, 输入电流不超过 **1.5A**。

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

No damage shall be presented at the cold start

冷启动时不能有损坏。

2.4. Averaged Efficiency /平均效率

88% min. @230Vac input (@25%, 50%, 75% and 100% of max load).

输入电压 **230Vac** 时, **25%、50%、75%和 100%**载时的平均效率不低于 **88%**。

2.5. Energy Consumption /空载

No load consumption $\leq 0.15W$ (230Vac/50Hz).

在额定输入 **230Vac/50Hz** 时,空载功耗 $\leq 0.15W$ 。

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			
+12.0V	0.0A	5A	11.4 V ~ 12.6V	200mVp-p	200-240Vac

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: 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 **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			
+12.0V	0.0A	5A	$\pm 3\%$	$\pm 5\%$	

3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 180Vac to 264Vac input & Full load.

输入电压 **180-264Vac** 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 & 230Vac/50Hz input turn off at the worst case.

输入电压 230Vac/50Hz 满载时, 关机时间最差情况不小于 10 毫秒。

3.5.Rise Time/上升时间

50mS max. @ Rated load.

额定负载时, 上升时间不超过 50 毫秒。

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

The overshoot at turn on and turn off shall not exceed 10% of nominal output voltage.

当电源过冲开/关机时, 输出电压不能超过 10%.

3.7.Output Load Transient Response/输出负载瞬态响应

Output voltage within 10.8-13.2V for load step from 20% to 80%, R/S: 0.8A/uS,
Frequency: 100Hz duration and 8mS at 80%.

输出电压 10.8-13.2V 时, 负载从 20% 到 80%, 斜率 0.8A/uS, 频率: 在 80%负载 100Hz 持续 8 mS.

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: $5.5A < I < 12A(180-264Vac)$

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 self-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 shall be protected when the output faces voltage condition such that no burning or damage occurs. The power supply shall recover the output after fault condition is removed without user intervention. Maximum output value 18V at In any others conditions (over voltage protection).

当过压保护时, 产品输出功率不会损伤或爆炸, 当过压情况解除后, 无人干涉产品恢复正常。过电压保护时, 最大输出 18V。

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

0°C to +60°C(Working for 30 minutes at input voltage 220V under full load/输入电压 220V 时, 在满载的条件下工作 30 分钟)

10%RH to 90%RH

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

-20°C to +80°C,

5%RH to 95%RH

5.3.85°C&85%RH Test/双 85 测试

Under the conditions of 85°C & 85% RH, the product should not be damaged after 300 hours of operation with an output power of 30W.

在 85°C & 85%RH 的条件下, 在输出功率 30W 的状态下, 产品工作 300H 不能出现损坏。

5.4.Sea level 5,000 meters/海拔 5,000 米

5.5.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

5.6.Drop Test/跌落

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm.

Apply one time on all surfaces, totally 6 surfaces. The electric performance and Hi-Pot test must be OK after the drop tests.

跌落高度:1m, 并跌落到厚度为 20mm 的木板上,每面各 1 次, 共 6 次, 在跌落后电气性能及安全测试 OK.

5.7.Waterproof Requirements/防水要求

Waterproof grade IPX6.Test standard for waterproof grade: The sample is immersed in water for 48 hours, at a depth of 80mm, and cannot enter the water.

防水等级 IPX6。防水等级的测试标准: 样品浸没水中浸泡 48H, 水深 80mm,不能进水。

6. Reliability Requirements/可靠性要求

6.1.Burn-in/煲机

The power supply shall be burn-in for 2 Hours under normal input and 80% rated load at 45°C ± 5°C. the electric performance and Hi-Pot test must be OK.

产品至少要在 45°C ± 5°C 的环境及 80%额定负载条件下煲机 2 小时, 电气性能及高压测试 OK.

6.2.MTBF/平均失效时间

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

平均间隔故障时间: 在 25°C, 额定输入与 100%负载条件下, 至少工作 50,000 小时.

6.3.E-caps lifetime/电解电容寿命

The E-caps used in this PSU must be with lifetime of 2 years @25°C@80% load@230Vac/50Hz input.

25°C下, 在 80%负载和 230VAC 输入条件, 电解电容寿命必须有 2 年.

6.4.Peak Load/峰值电流

When inputting 220Vac, the power supply cold start. tests OCP, with an output current of 9A, a maintenance time of 20S, and a shutdown time of 30S.

输入 220Vac 时, 电源冷机测试 OCP, 输出电流等于 9A, 维持时间为 20S, 停机时间为 30S.

6.5.AC PIN residual voltage / AC 插座残压

After unplugging the AC plug for 3 seconds, the residual voltage requirement for the AC PIN is less than 34V.

当拔出 AC 插头 3S 后, AC PIN 残留电压要求小于 34V

7. EMI/EMS Standards/EMI/EMS 标准

7.1.EMI Standards/EMI 标准

GB4343.1
GB/T4343.2
GB17625.1
GB/T17625.2

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	+/-4KV	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
80-1000MHz,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	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 +/-4KV	A
Differential mode/差模 +/-2.5KV	

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: 3000Vac / 10mA max. / 60 second.

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

Primary to Secondary: 3300Vac / 5mA max. /3S.

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

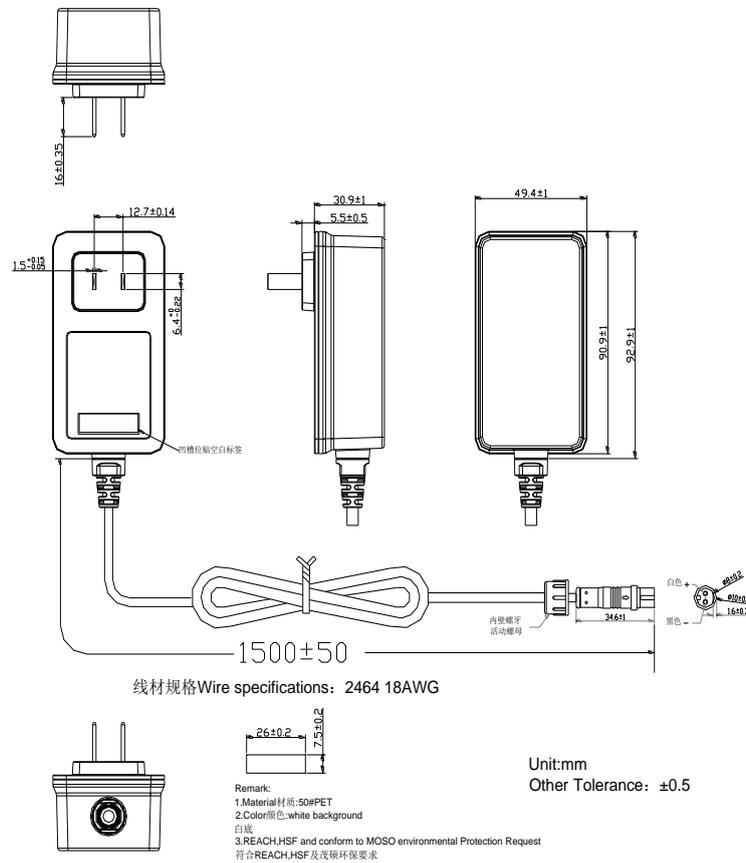
50MΩ min. at primary to secondary add 500Vdc test voltage.

在初级与次级间加 **500Vdc** 进行测试. 绝缘阻抗最小 **50MΩ**.

8.4.Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	
CQC	China	GB4706.1	MEET	

9. Mechanical Outline Drawing/外观示意图



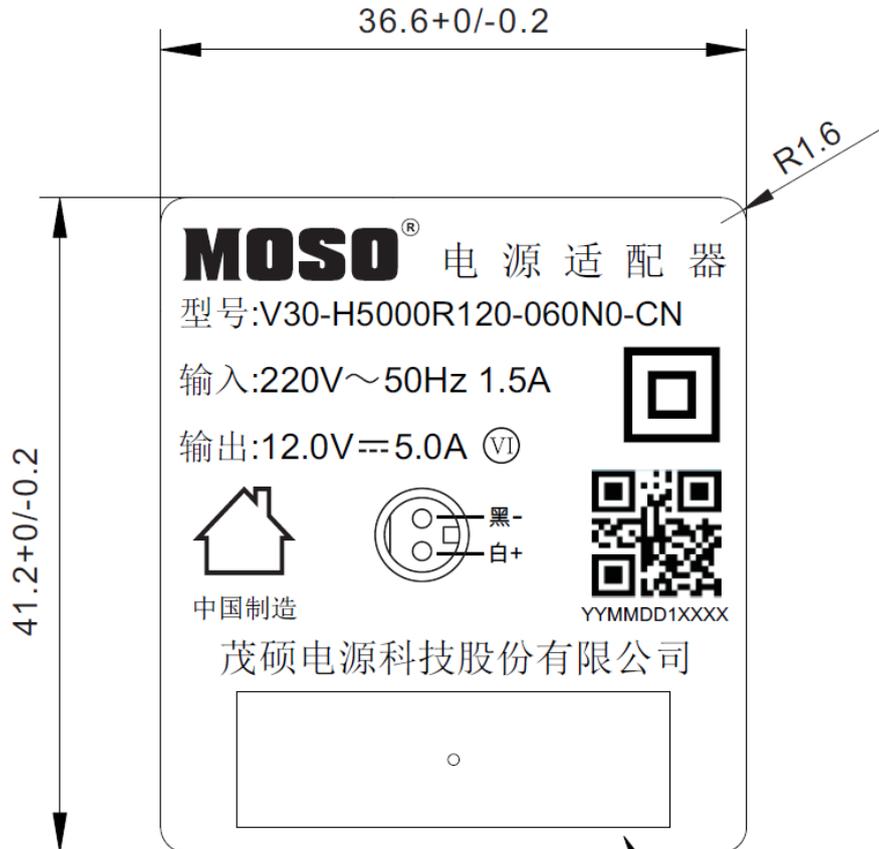
外壳材质: PC 耐温: 120°C 。

PC+ABS 耐温: 95°C 。

备注: 1)PC 材质符合球压测试要求。

2)外壳与线材为白色。

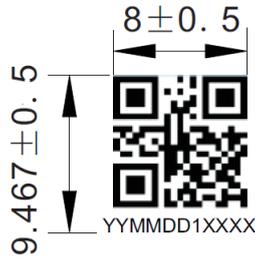
10. I/O Marking Drawing/铭牌示意图



此框为条码标签框
镭射需避开此框

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 :8*8mm(± 0.2)

二维码扫描内容/Code content:YYMMDD1XXXX 总共11位/11digits in total

二维码解析如下/Code analysis:

YY:producing year(产品实际生产年份,如2024年,取24)

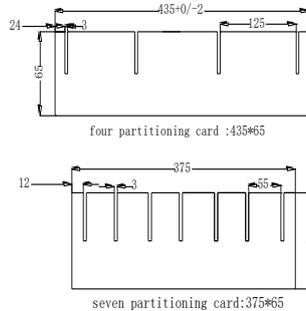
MM:producing month(产品实际生产月份,如02月,取02)

DD:producing date(产品实际生产日期,如15日,取15)

1:Product code(产品编码:实际S编码SC785-C0)

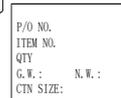
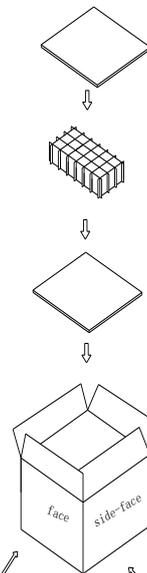
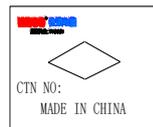
XXXX:product listing number(产品序列号,0001-9999)

11. Package Drawing/包装示意图



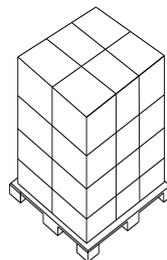
Packing Instruction :

- 1、the product put in the bag , then the packing product put in the partitioning card groove , 18PCS/floor, 4 floors in all , 72PCS/box such as : 18pcs/floor*4floor=72PCS/box
- 2、the usage of the packing materials :
 - 1) the usage of the four partitioning card 435*65 : 28PCS
 - 2) the usage of the seven partitioning card 375*65 : 16PCS
 - 3) the usage of the PE bag 250*120 : 72PCS
 - 4) the usage of the flat 435*375:5PCS
 - 5) 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

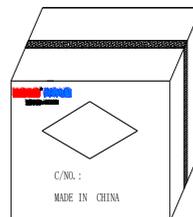


450*390*300MM

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

- The requirement of PE bag packing: PE bag without sealing by adhesive tape.
 PE bag with sealing by adhesive tape
 Other requirement

Remark: If the customer has not chose the PE bag packing way, we will use the PE bag without sealing by adhesive tape.