

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-V2000R052-012AA0-US
PRODUCT NO.: 产品编号:	SCXXX-U0
SAMPLE DATE: 送样日期:	2024-09-06

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

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1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 10.4W continuous output power.

资料详细描述了一款 **10.4W**(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	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current/AC 输入电流

0.5A max. @ 100-240Vac input & Full load.

输入电压 100-240Vac 满载时, 输入电流不超过 0.5A。

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

60Amax. @ 230Vac input

输入电压 230Vac 时, 输入电流不超过 60A。

2.4. Averaged Efficiency/平均效率

78.7% min. @ 115Vac 60Hz/230Vac 50Hz input (@25%, 50%, 75% and 100% of max load)

输入电压 115V 60Hz/230V 50Hz 时, 25%、50%、75%和 100%载时的平均效率不低于 78.7%。

2.5. Energy Consumption /空载功耗

No load Consumption $\leq 0.1W$ (115Vac/60Hz, 230Vac/50Hz)

输入电压 115Vac/60Hz, 230Vac/50Hz 时, 空载功耗均小于 0.1W。

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		Line Regulation /空载	Load Regulation/负载	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load				
+5.2V	0.0A	2A	5~5.6V	5~5.4V	120mVp-p	100-240V

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF 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 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			
+5.2V	0.0A	2A	$\pm 3\%$	$\pm 5\%$	

3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 100-240Vac input & Full load.

输入电压 **100-240Vac** 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. Fall Time/下降时间

50mS max. @ Rated load.

额定负载时, 下降时间不超过 **50 毫秒**。

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

Output voltage within 4.4V~5.8V for load step from 10% to 80%, R/S: 2A/uS, frequency: 100-10KHz duration and 8mS at 80%.

输出电压在 **4.4V~5.8V** 之内负载从 **10%至 80%**, **R / S: 2A / uS**, 频率: **100-10KHz** 变化。

3.9. Capacitive load/容性负载

1000UF capacitive load @ 230Vac/264Vac input & open load and full load. 230Vac/264Vac 输入, 空载及满载输出, 在 **1000UF** 负载条件下能启动。

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: $I < 3A$ (100-240Vac)

The output shall hiccup when the over currents applied to the output rail, and shall be self-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 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.

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。

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

20%RH to 95%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 non-condensing.

5.3. Sea level 5,000 meters/海拔 5,000 米.

5.4. 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, 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

5.5. Drop Test/跌落

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, 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,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 40°C ± 5°C. the electric performance and Hi-Pot test must be OK.

产品至少要在 40°C ± 5°C 的环境及 80%额定负载条件下煲机 4 小时, 电气性能及高压测试 OK.

6.2. MTBF/平均故障间隔时间

The MTBF of power supply shall be over than 50,000 Hours @ 25°C 100%Load (SR-332)

平均故障间隔时间:在 25°C,100%负载条件下, 至少工作 50,000 小时. (SR-332).

6.3. Capacitors lifetime/电容器寿命

life:21900hrs@230Vac,full load,25°C

230V 输入电压, 满载 25°C 环境温度下电容寿命 21900H

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

FCC Part15

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	+/-15KV	A
Contact discharge/接触放电	+/-8KV	A

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	1KV	A
AC-input/交流输入	2KV	A

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 +/-4KV	B
Differential mode/差模 +/-4KV	

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 (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

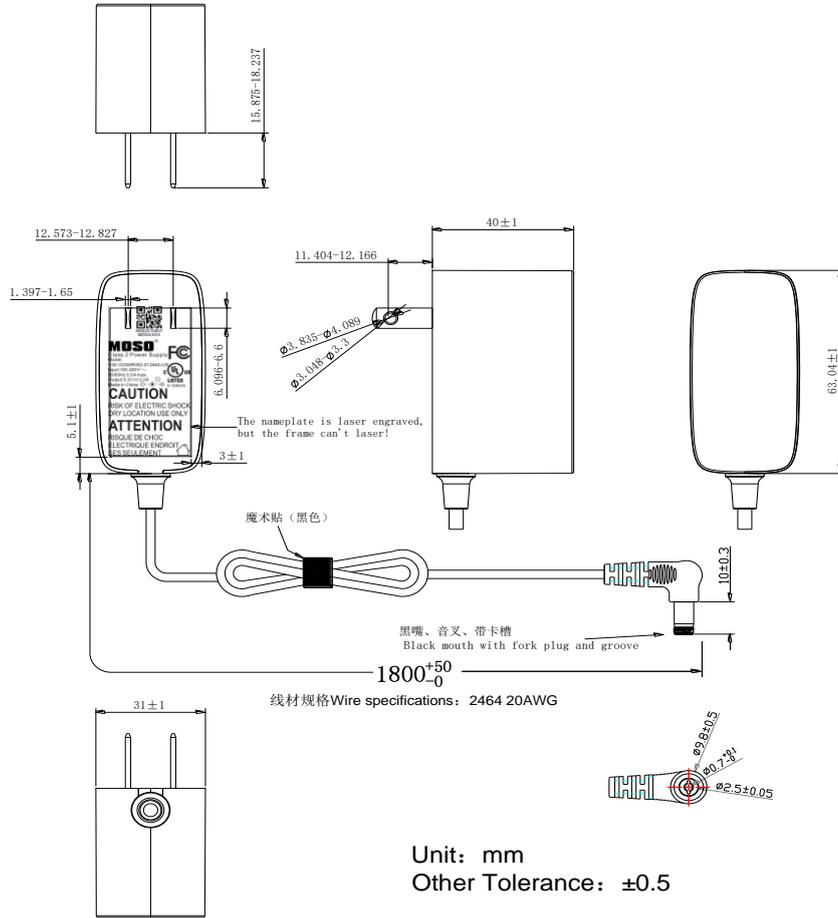
50MΩ min. at primary to secondary add 500Vdc test voltage

在初级与次级间加 500Vdc 进行测试

8.4. Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	
UL	USA	UL1310	APPROVAL	

9. Mechanical Outline Drawing/外观示意图



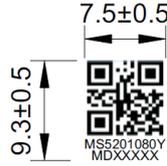
外壳材质: PC 耐温: 120°C

PC+ABS 耐温: 95°C

备注: 1)PC 材质符合球压测试要求;

2)外壳与 DC 线为黑色.

10. I/O Marking Drawing/铭牌示意图



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 :7*7mm(±0.2)
 二维码扫描内容/Code content:MS5201080YMDXXXXX 总共17位/17digits in total
 MSPPPPPPYMDXXXXX
 二维码解析如下/Code analysis:
 MS:Manufacturer code(厂家代码: MOSO 缩写)
 P: Bare material code(裸机物料代码:云鼠料号后七位数字5201080,固定不变)
 Y:producing year(产品实际生产年份,年份编码对应关系如右图,如2024对应E,以此类推)
 M:producing month(产品实际生产月份, 1-9月对应数字1-9,10-12月对应字母ABC,如右图)
 D:producing date(产品实际生产日期, 1-9日对应数字1-9, 10-17对应字母: ABCDEFGH,
 18-22号对应字母: JKLMN, 23-31号对应字母: PQRSTU VWX.
 (生产日期中:i 和 o不用), 如右图)
 XXXXX:product listing number(产品序列号, 00001-99999)

紫光镭射

Remark:

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