茂硕电源科技股份有限公司
MOSO POWER SUPPLY TECHNOLOGY CO.,LTD

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

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-P2000J240-048S0**
PRODUCT NO.: 产品编号：	**SDXXX-F0**
SAMPLE DATE: 送样日期：	**2025-11-27**

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

MOSO® 茂硕电源
股票代码：002660

茂硕电源科技股份有限公司
MOSO POWER SUPPLY TECHNOLOGY CO.,LTD

MOSO Industrial Park, Nanshan District,
Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

E. C. LIST/变更履历表

Rev. 版本	Description of Change/变更内容描述		Changed Date/日期	ECN No.
	Before/变更前	After/变更后		
A1	Original Release（初次发行）	---	2025-11-27	---

MOSO Industrial Park, Nanshan District,
Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

** Table Of Content/目录 **

1. SCOPE/简述 4
1.1. Description /类型 4
1.2. Green Requirements/环保要求 4
2. Input Characteristics/输入特性 4
2.1. Input Voltage & Frequency/输入电压与频率 4
2.2. Input AC Current/AC 输入电流 4
2.3. Inrush Current (cold start)/浪涌电流(冷启动) 4
2.4. Averaged Efficiency/平均效率 4
2.5. Energy Consumption /空载功耗 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 5
3.6. Fall Time/下降时间 5
3.7. Output Overshoot / Undershoot/输出过冲/欠冲 5
3.8. Output Load Transient Response/输出负载瞬态响应 5
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. Sea level shall be low 5,000m/海拔 5,000 米以下 6
6. Reliability Requirements/可靠性要求 6
6.1. Burn-in/老化 6
6.2. MTBF/平均失效时间 6
6.3. E-caps lifetime/电容寿命 6
7. EMI/EMS Standards/EMI/EMS 标准 7
7.1. EMI Standards/EMI 标准 7
7.2. EMS Standards/EMS 标准 7
8. Safety Standards/安规标准 8

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

8.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压) 8
8.2. Leakage Current/漏电流 8
8.3. Insulation Resistance/绝缘阻抗 8
8.4. Regulatory Standards/安规标准 8
9. Mechanical Outline Drawing/外观示意图 9
10. Package Drawing/包装示意图 10

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

1. SCOPE/简述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 48W continuous output power.

资料详细描述了一款 **48W** 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

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

1.3A max. @ 100-240Vac input & Full load.

输入电压 **100-240Vac** 满载时，输入电流不超过 **1.3A**。

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

100A max. @ 230Vac input.

输入电压 **230Vac** 时，输入电流不超过 **100A**。

2.4. Averaged Efficiency/平均效率

87.77% min. @115Vac 60Hz/230Vac 50Hz input (@25%, 50%, 75% and 100% of max

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

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 **87.77%**

2.5. Energy Consumption /空载功耗

No load Consumption ≤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	Rated Load/额定负载		Output Range	R+N	Remark
Rate	Min. Load	Max. Load	输出电压范围	纹波与噪声	备 注
+24.0V	0.0A	2.0A	22.8V-25.2V	<240mV	100-240Vac

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：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	Load Condition/负载条件		Line Regulation	Load Regulation	Remark
Rate	Min. Load	Max. Load	线性调整率	负载调整率	备 注
+24.0V	0.0A	2.0A	±3%	±5%	

3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 100Vac to 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 &115Vac/60Hz input turn off at the 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 the 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

30mS max. @ Rated load.

额定负载时，上升时间不超过 **30** 毫秒。

3.6. Fall Time/下降时间

30mS max. @ Full load

满载时，下降时间不超过 **30** 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，输入全电压时，全负载时，输出电压小于 **10%**。

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

Output voltage within 22.8-25.2V for load step from 25% to 50% to 25%,50% to 75% to 50% R/S: 0.5A/uS, Transient Response Recovery Time :200uS，Dynamic response

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

overshoot ±10%.

输出电压在 **22.8-25.2V** 时，负载从 **25%**到 **50%**到 **25%**，**50%**到 **75%**到 **50%**，斜率 **0.5A/uS**，瞬时响应恢复时间:**200uS**，动态响应超调**±10%**。

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**:** 3.5A＞I＞2.2A (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.

过流时，输出将进入打嗝模式，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℃ to +40℃, 10%RH to 90%RH

温度 **0**℃到**+40**℃，湿度 **10%RH** 到 **90%RH**。

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

-20℃ to +70℃, 5%RH to 95%RH non-condensing ,

温度**-20℃ to +70℃**，湿度 **5%RH to 95%RH**

5.3. Sea level shall be low 5,000m/海拔 5,000 米以下

6. Reliability Requirements/可靠性要求

6.1. Burn-in/老化

The power supply shall be burn-in for 4 Hours under normal input and 80% rated load at 40℃±5℃. the electric performance and Hi-Pot test must be OK.

电源在额定输入和 **80%**负载下，在 **40**℃±**5**℃环境温度下老化 **4** 小时。

6.2. MTBF/平均失效时间

The MTBF shall be at least 50,000hours at 25℃, Full load and nominal input condition.

平均间隔故障时间：在 **25**℃,满载条件下，至少工作 **50,000** 小时.

6.3. E-caps lifetime/电容寿命

The E-caps used in this PSU must be with lifetime of 3 years at 25℃ with 100% load @115Vac/60Hz input ,230Vac/50Hz input.

25℃下，在 **100%**负载和 **115Vac/60Hz**、 **230Vac/50Hz** 输入条件，电解电容寿命必须有 **3** 年.

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

GB/T9254 GB17625.1 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	judgment criteria/评定标准
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	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	A
AC-input/交流输入	+/-1KV	A

7-2-4EN 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 +/-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	judgment criteria/评定标准
3V	A
0.15-80 MHz,80%AM(1KHz)	

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

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，干拢消除后，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 /10mA max. / 3S (when production)

初级对次级: **3300Vac / 10mA max. /3S**(生产作业)

8.2. Leakage Current/漏电流

0.25mA max. at 264Vac / 50Hz

8.3. Insulation Resistance/绝缘阻抗

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

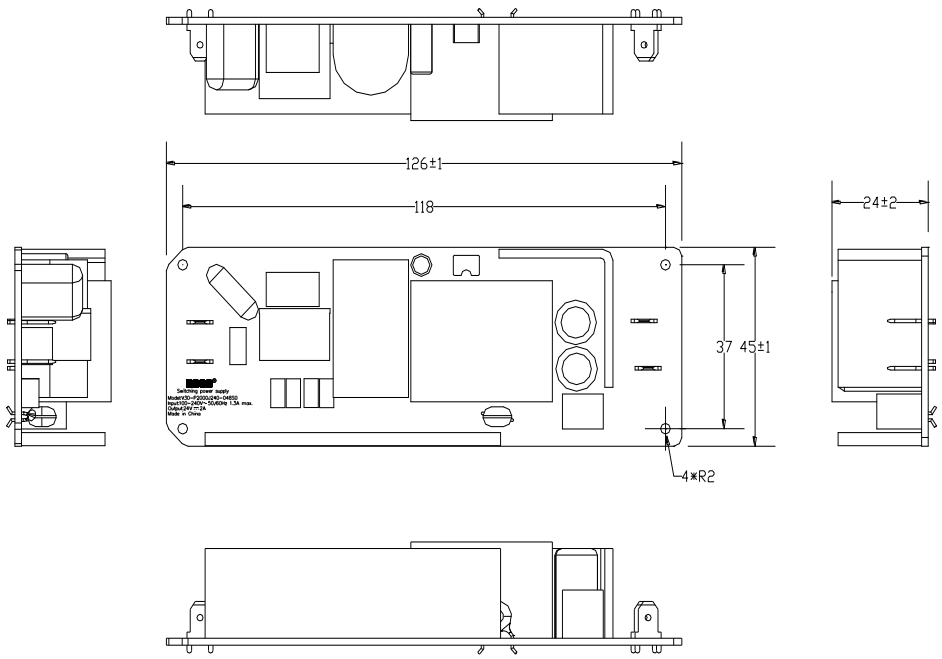
在初级与次级之间加载测试电压 **500V** 测试，绝缘阻抗最小 **50MΩ.**

8.4. Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	Note/备注

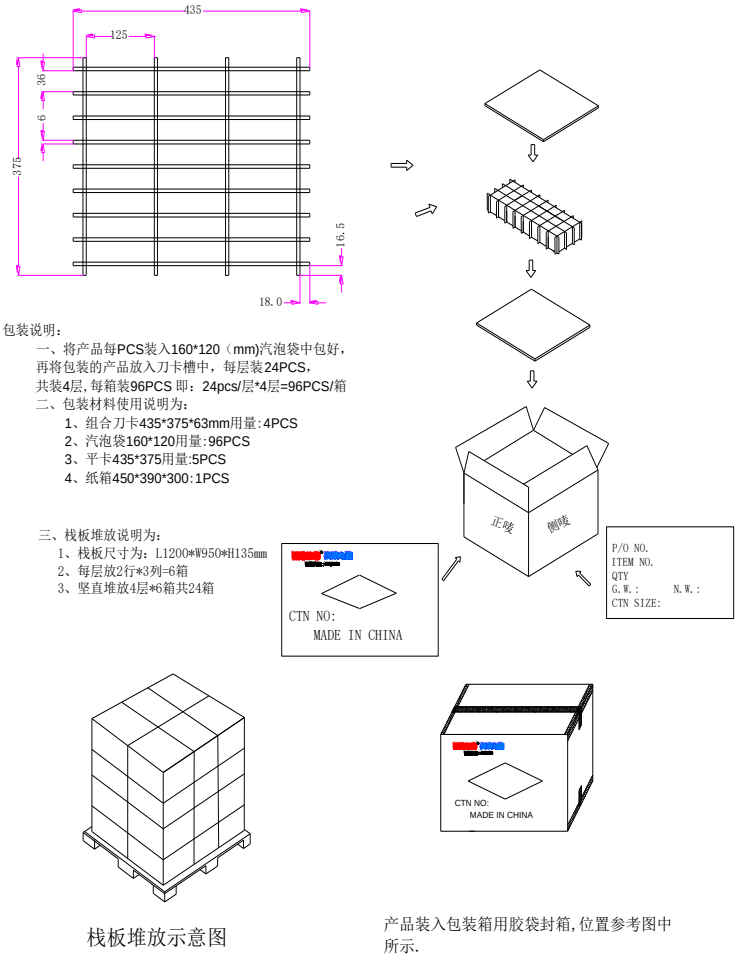
MOSO Industrial Park, Nanshan District,
Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000　27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

9. Mechanical Outline Drawing/外观示意图



Unit:mm
Other Tolerance：±0.5

10. Package Drawing/包装示意图



包装说明：
一、将产品每PCS装入160*120（mm)汽泡袋中包好，再将包装的产品放入刀卡槽中，每层装24PCS，共装4层，每箱装96PCS 即：24pcs/层*4层=96PCS/箱
二、包装材料使用说明为：
1、组合刀卡435*375*63mm用量:4PCS
2、汽泡袋160*120用量:96PCS
3、平卡435*375用量:5PCS
4、纸箱450*390*300:1PCS

三、栈板堆放说明为：
1、栈板尺寸为：L1200*W950*H135mm
2、每层放2行*3列=6箱
3、堅直堆放4层*6箱共24箱

栈板堆放示意图

产品装入包装箱用胶袋封箱，位置参考图中所示.

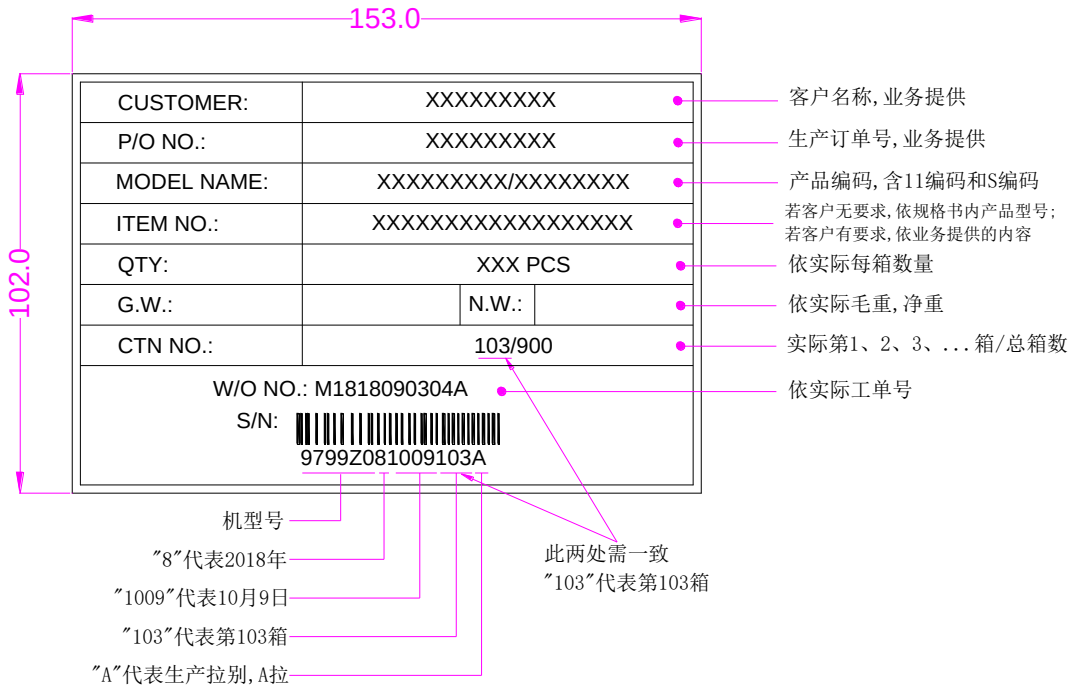
汽泡袋包装要求:☐汽泡袋不用胶带封口；
☐汽泡袋用胶带封口；
☐其它要求；

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

茂硕电源科技股份有限公司
MOSO POWER SUPPLY TECHNOLOGY CO.,LTD

MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000　27657555
P.C:518108
FAX: 86-755-27657908
http://www.mosopower.com

Carton label



备注：

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