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参考规格书

SPECIFICATION FOR REFERENCE

CUSTOMER/客户： _____

CUSTOMER P.N./客户物料号： _____

MODEL NO./产品型号： A30-V5790R190-110G0-CN

PRODUCT NO./产品编号： SCXXX-C0

SAMPLE DATE/送样日期： 2022-11-17

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
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拟　制：	项目工程师：	安规工程师：	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

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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）	---	2022-11-17	---

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1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 110W continuous output power.

资料详细描述了一款 110 **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 **RoHS** requirement.

此款电源符合 **RoHS** 要求**.**

1.1. Description

- ■ 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

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 176Vac to 264Vac single phase.

输入电压范围：从 **176Vac** 到 **264Vac,** 单相输入**.**

	Minimum/最小	Nominal/额定值	Maximum/最大
Input Voltage/输入电压	176Vac	200 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

0.9A max. @ 200-240Vac input & Full load.

输入电压 **200-240Vac** 满载时，输入电流不超过 **0.9A**。

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

The inrush current will not exceed 170A at 240 input and Max load for a cold start at 25℃.

在输入 **240Vac**、最大负载、**25**℃条件下冷启动的浪涌电流不能超过 **170A**

2.4. Averaged Efficiency/平均效率

88% 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 **88%**

2.5. Energy Consumption /空载功耗

No load Consumption ≤0.21W(230Vac/50Hz).

在额定输入 **230Vac/50Hz** 时**,**空载功耗**≤0.21W.**

2.6. Power Factor /功率因数

The PF should not be lower than 0.9 at 230Vac＆full load.

输入电压**230Vac**满载时，**PF**不低于**0.9.**

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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
+19V	0.0A	5.79A	18.05V~ 19.95V	300mVp-p	200-240V

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	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
+19V	0.0A	5.79A	±5%	±5 %	

3.3. Turn - on Delay Time/开机延迟时间

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

输入电压 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 &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 10 毫秒。

3.5. Rise Time/上升时间

200 mS max. @ Rated load.

额定负载时，上升时间不超过 200 毫秒。

3.6. Fall Time/下降时间

500 mS max. @ Full load.

满载时，下降时间不超过 500 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 18.05-19.95V for load step from 0.01A（10msto 100%（10ms）, R/S 0.2A/uS

输出电压在 18.05-19.95V 之间，负载变化：从 0.01A（10ms）到 100%（10ms），斜率：0.2A/uS

3.9. Peak Load/ 峰值负载

Test Condition:

11.58A/2mS 2.895A/3mS,R/S:10mA/uS,Output Voltage Limit:17.1V<Vo<20.9V.

14.475A/10ms 2.895A/40ms,R/S:10mA/Us,Output Voltage Limit:13V<Vo<20.9V.

测试条件：

11.58A/2mS 2.895A/3mS 斜率：10mA/uS, 输出电压范围: 17.1V<Vo<20.9V.

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14.475A/10ms 2.895A/40ms 斜率：10mA/uS,输出电压范围: 13V<Vo<20.9V.

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＞6.948A(200-240Vac)

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 36V @0.5A Min load.

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. 0.5A 负载时，最大输出 36V。

5. Environment Requirements/环境要求

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

-10℃ to +40℃

0%RH to 90%RH

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

-20℃ to +70℃

10%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: 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 3 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,3 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 2 Hours under normal input and 80% rated load at 40℃±5℃，the electric performance and Hi-Pot test must be OK.

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电源应在正常输入和 **40**℃±**5**℃的 **80**％额定负载下老化 **2** 小时，电性能和 **Hi-Pot** 测试必须正常。

6.2. MTBF/平均失效时间

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

平均间隔故障时间：在 **25**℃,**100%**负载条件下，至少工作 **50,000** 小时.

Reference Standard:MIL-HDBK-217F

参考标准：**MIL-HDBK-217F**

6.3. E-caps lifetime/电容寿命

The E-caps used in this PSU must be with lifetime of 3years @ 25℃ under 100% load and 230VAC input condition.

在 **25** 度环境下，满载和**/230VAC** 输入电压，电容寿命至少达 **3** 年。

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

GB9254 GB17625.1

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
10V/m (r.m.s)	A
30-1000MHz,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	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	Test criteria/测试标准
Common mode/共模 +/- 1KV	A
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	Test criteria/测试标准
3V	A
0.15-30 MHz,80%AM(1KHz)	

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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. / 3 S.

初级对次级:　3300Vac / 5mA max. / 3S(生产作业).

8.2. Leakage Current/漏电流

0.25mAmax. at 264Vac / 60Hz.

8.3. Insulation Resistance/绝缘阻抗

100MΩ 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 100MΩ.

8.4. Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	
CCC	China	GB4943.1	APPROVAL	

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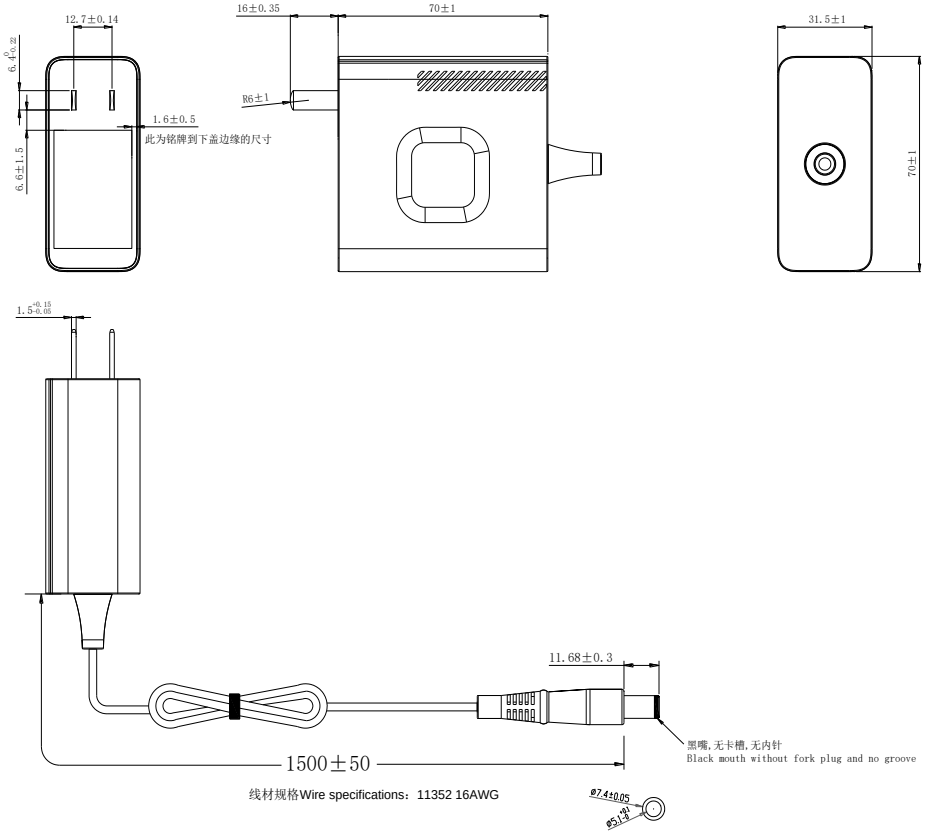
9. Mechanical Outline Drawing/外观示意图



外壳材质：☑PC 耐温：120℃

☐PC+ABS 耐温：95℃

备注：1)PC 材质符合球压测试要求

2)外壳与线材为黑色（1101M）