

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: MS-Z3330R120-048D0-Q

PRODUCT NO./产品编号: SCXXX-Q0/XXXXXX

SAMPLE DATE/送样日期: 2023-04-15

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核		

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1. SCOPE/简述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 39.96W continuous output power.

资料详细描述了一款 **39.96W** 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 (metal 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 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

1.2A max. @ 100-240Vac input & Full load.

输入电压 **100-240Vac** 满载时, 输入电流不超过 **1.2A**。

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

87.58% min. @ 115Vac, 230Vac 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 **87.58%**。

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		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	3.33A	11.4V-12.6V	$\leq 150mVp-p$	100-240V

Ripple & Noise: Measurement is done by 20MHz b width oscilloscope 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: 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 **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 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	3.33A	± 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 & 115Vac/60Hz, 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, output voltage from 10% to 90%.

额定负载时, 输出电压从 10% 上升 90%. 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 11.4V~12.6V for load step from 20% to 80%, R/S: 0.5A/uS, frequency: 100Hz duration and 8mS at 80%.

输出电压在 11.4V~12.6V 之内负载从 20% 至 80%, R / S: 0.5A / uS,

频率: 持续时间为 100Hz, 80% 时为 8mS。

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: $6.66A > I > 3.66A$ (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°C to +45°C, 10%RH to 90%RH

(The power supply can be working normally under 50°C)

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

-40°C to +70°C, 5%RH to 95%RH non-condensing

温度-40°C to +70°C, 湿度 5%RH to 95%RH。

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

5.4. Vibration/振动

50Hz sweep at a constant acceleration of 2.4G(Breadth: 3.5mm) for 0.5Hour for each of the perpendicular axes X, Y, Z.

扫描频率: 50Hz, 恒定加速度: 2.4G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 0.5 小时

5.5. Drop in/跌落

Height: 1m; the product should be fell off on the hardwood floor 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/老化

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.

45°C±5°C, 电源在正常输入电压和 80%额定负载条件下老化 2 小时后, 电气性能及高压测试 OK。

6.2. MTBF/平均失效时间

The MTBF shall be at least 50,000hours at 25°Cat 100% load.

平均间隔故障时间: 在 25°C满载条件下, 至少工作 500,000 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 3 year @25°C @ 115Vac/60Hz and 230Vac/50Hz Input.

25°C下, 在 100%负载和 115Vac/60Hz and 230Vac/50Hz 输入条件, 电解电容寿命必须有 3 年。

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

GB/T9254 GB17625.1 FCC Part15 EN55032 EN55035 CNS 15936

AS/NZS CISPR32 KN32 KN35 J55032

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	+/-15KV	B
Contact discharge/接触放电	+/-8KV	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
80Mhz~6GHz ,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	+/-1KV	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	judgment criteria/评定标准
Common mode/共模 +/-4V	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)	

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. / 60S (when safety testing)

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

Primary to Secondary: 1800Vac /5mA max. / 3S (when production)

初级对次级:1800Vac / 5mA max. /3S(生产作业)

8.2. Leakage Current/漏电流

3.5mA max. 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.

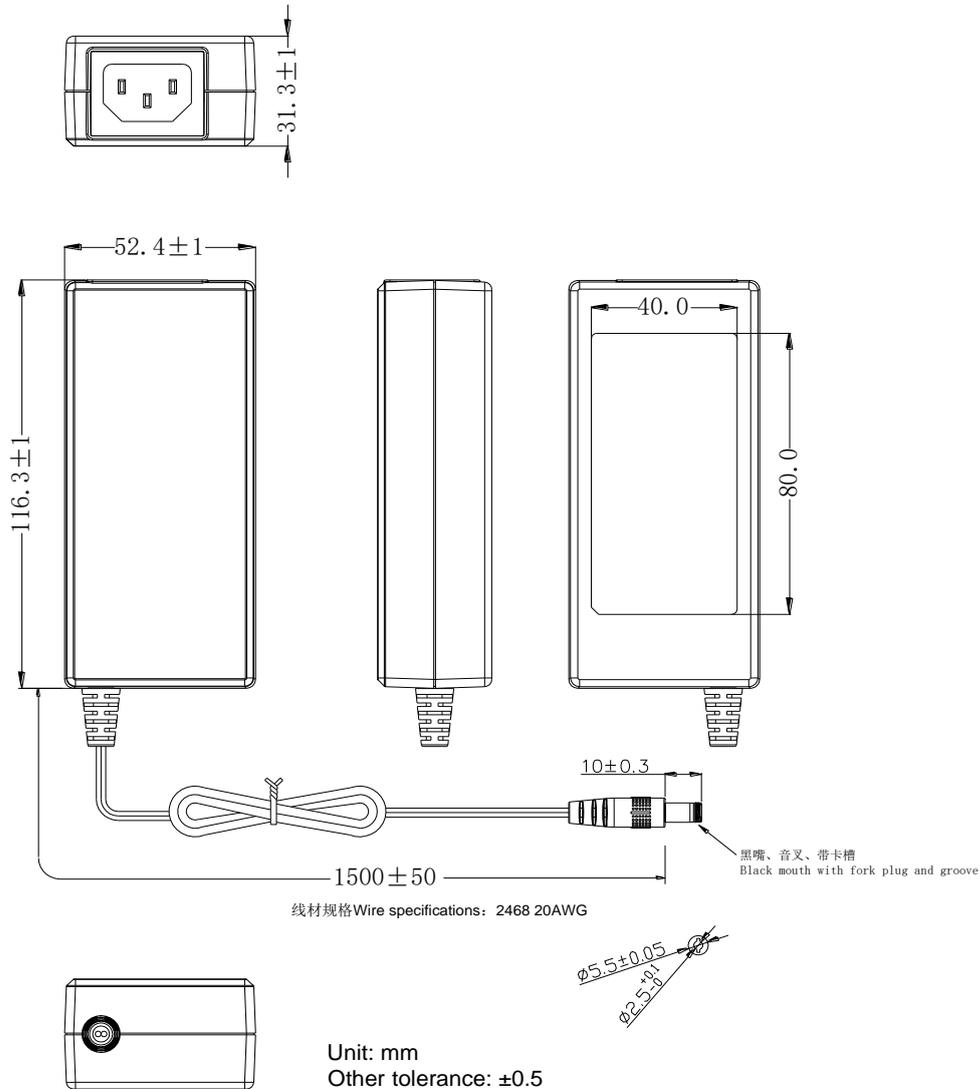
8.4. Earthing Resistance

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	Note/备注
CCC	China	GB4943.1	APPROVAL	
CE	Europe	EN62368-1	APPROVAL	
UKCA	UK	EN62368-1	APPROVAL	
UL	USA	UL62368-1	APPROVAL	

9. Mechanical Outline Drawing/外观示意图



外壳材质: ■PC 耐温: 125°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;