

SPECIFICATION FOR REFERENCE

CUSTOMER: _____

CUSTOMER P.N.: _____

MODEL NO.: MS-Z2000R250-065A0-PPRODUCT NO.: SCXXX-P0SAMPLE DATE: 2022-11-23

CUSTOMER AUTHORIZED SIGNATURE		

Please return to us one copy of "SPECIFICATION FOR APPROVAL"
with you approved signature.

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

TEL: 86-755-27657000

27657555

P.C.: 518108

FAX: 86-755-27657908

E-mail: moso@mosopower.com<http://www.mosopower.com>

Prepared By:	Safetied By:	Checked By:	Approved By:

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1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 50W continuous output power.

The power supply shall meet the **RoHS** requirement.

1.1. Description

- | | |
|--|---|
| <input type="checkbox"/> SMPS Adaptor (Wall mount) | <input checked="" type="checkbox"/> SMPS Adaptor (Desk-top) |
| <input type="checkbox"/> Open Frame | <input type="checkbox"/> SMPS Unit (With Case) |
| <input type="checkbox"/> Others | |

2. Input Characteristics

2.1. Input Voltage & Frequency

The range of input voltage is from 90Vac to 264Vac single phase.

	Minimum	Normal	Maximum
Input Voltage	90Vac	100Vac~240Vac	264Vac
Input Frequency	47Hz	50Hz/60Hz	63Hz

2.2. Input AC Current

1.6A max. @ 100-240Vac input & Full load.

2.3. Inrush Current (cold start)

I²T - under 10% (calculated by RMS) : Fuse, Bridge diode

2.4. Average Efficiency

88% min. @ 115Vac input (Average@25%, 50%, 75% and 100% of max load) (Meet DOE VI)

89% min. @ 230Vac input (Average@25%, 50%, 75% and 100% of max load) (Meet COC Tire2)

79% min. @ 115Vac input (Average@10% of max load) (Meet COC Tire2/Meet DOE VI).

79% min. @ 230Vac input (Average@10% of max load) (Meet COC Tire2/Meet DOE VI).

2.5. Energy Consumption

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

2.6. Peak Load Power

Peak Load Power >200W(@ 110VAC ,230VAC)Time, Max 2S

3. Output Characteristics

3.1. Static Output Characteristics <Vo & R+N>

Output Rate	Rated Load		Peak Load 2s ≤ Time < 10s	Output Range	Ripple and noise	Remark
	Min. Load	Type load				
+25V	0.0A	2A	8A	23.75V ~26V	Ripple ≤ 150mVp-p Noise ≤ 150mVp-p	100-240V

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF Electrolytic capacitor. (Test under the condition of rated input and rated output).

3.2. Line/ Load Regulation

Output Rate	Load Condition		Line Regulation	Load Regulation	Remark
	Min. Load	Type load			
+25V	0.0A	2A	± 2%	± 5%	

3.3. Turn - on Delay Time

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

3.4. Hold-up Time

15mS min. @ Full load & 115Vac/60Hz input turn off at the worst case.

20mS min. @ Full load & 230Vac/50Hz input turn off at the worst case.

3.5. Rise Time

30mS max. @ Rated load.

3.6. Output Overshoot / Undershoot

10% max. When the power on or off, when it is the full input voltage and full load.

3.7. Output Load Transient Response

Output voltage within 23.75V ~26V 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 overshoot 5%.

4. Protection Requirements

4.1. Over Current Protection

Over Current Point Limited: $11A > I > 8.7A$ (110-230Vac)

The output shall hiccup when the over current applied to the output rail, and shall be self-recovery when the fault condition is removed.

4.2. Short Circuit Protection

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.

4.3. Over Voltage Protection

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.

5. Environment Requirements

5.1. Operating Temperature and Relative Humidity

0°C to +45°C

10%RH to 90%RH

5.2. Storage Temperature and Relative Humidity

-20°C to +80°C

5%RH to 95%RH non-condensing @ Sea level shall be low 5,000 meters.

5.3. Vibration

10 to 300Hz to scan at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

5.4. Drop Test

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 6 times. The electric performance and Hi-Pot test must be OK after the drop tests.

5.5. Temperature rise specifications: 35K Max.

6. Reliability Requirements

6.1. Burn-in

The power supply shall be burn-in for 2 Hours under normal input and 80% rated load at 40°C ± 5°C @ 100Vac/240Vac.

6.2. MTBF

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

6.3. E-Cap life

The E-caps used in this PSU must be with lifetime of 3 years @25°C@100% load@ 100Vac/60Hz、240Vac/50Hz Input.

7. EMC Standards

7.1. EMI Standards

EN55032 EN55035

7.2. EMS Standards

7-2-1 EN 61000-4-2, electrostatic discharge (ESD) requirement

Discharge characteristic	Test level	Test criteria
Air discharge	+/-15KV	B
Contact discharge	+/-8KV	B

7-2-2 EN 61000-4-3, radiated electromagnetic field susceptibility (rs)

Test level	Test criteria
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

Coupling	Test level	Test criteria
AC-input	1KV	A
AC-input	1KV	A

7-2-4 EN 61000-4-5, surge capability requirement

Surge voltage	Test criteria
Common mode +/-2KV	B
Differential mode +/-2KV	

7-2-5 EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity requirement

Test level	Test criteria
3V	A
0.15-80 MHz,80%AM(1KHz)	

7-2-6 Assessment criteria

Acceptance criteria	Performance
A	Agreed operational behavior within the specified limits
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.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention.

8. Safety Standards

8.1. Dielectric Strength (Hi-pot)

Primary to Secondary: 3000Vac / 10mA max. / 60second.

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

8.2. Leakage Current

0.1mA max. at 264Vac / 60Hz.

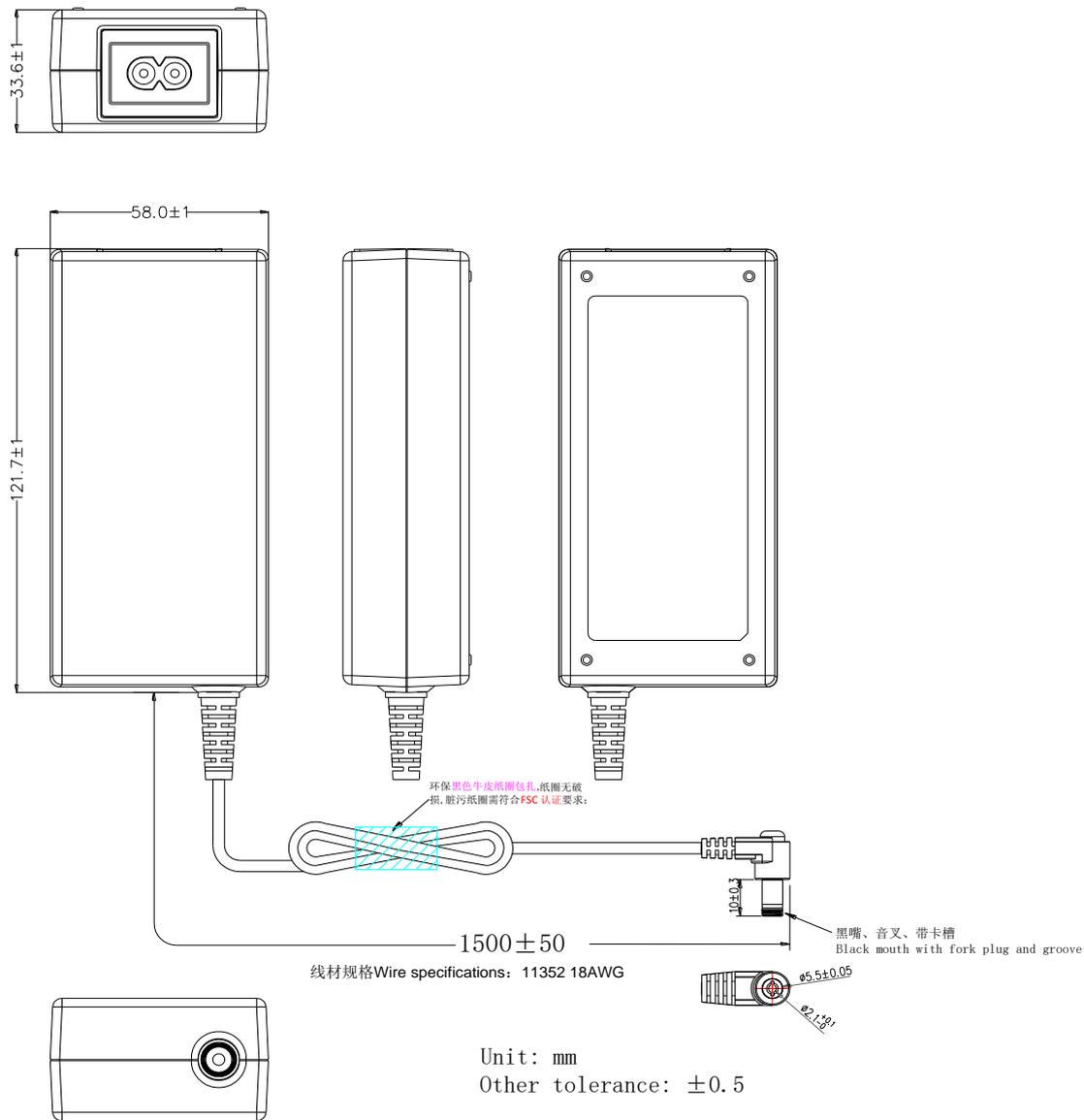
8.3. Insulation Resistance

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

8.4. Regulatory Standards

Type	Country	Standard	State	Note
S-mark	Argentina	IEC62368-1	MEET	

9. Mechanical Outline Drawing



Case material: ■ PC temperature resistance: 120°C

□ PC+ABS temperature resistance: 95°C

Remark: 1) PC material compliances with ball pressure testing requirement.

2) The color of enclosure and DC cable are black.