

SPECIFICATION FOR REFERENCE

CUSTOMER : _____

CUSTOMER P.N. : _____

MODEL NO. : _____ **MS-Z2000R250-050D0-P** _____

PRODUCT NO. : _____ **SCXXX-P0/XXXXXX** _____

SAMPLE DATE : _____ **2023-08-21** _____

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 :	Checked By:	Safetied By :	Approved By :

**** Table Of Content ****

1. SCOPE.....	3
1.1. Description.....	3
2. Input Characteristics	3
2.1. Input Voltage & Frequency.....	3
2.2. Input AC Current/AC	3
2.3. Inrush Current (cold start).....	3
2.4. Average Efficiency	3
2.5. Energy Consumption.....	3
3. Output Characteristics	3
3.1. Static Output Characteristics <Vo & R+N>.....	3
3.2. Line/ Load Regulation.....	3
3.3. Turn - on Delay Time	3
3.4. Hold-up Time.....	4
3.5. Rise Time.....	4
3.6. Fall Time	4
3.7. Output Overshoot / Undershoot.....	4
3.8. Output Load Transient Response	4
4. Protection Requirements	4
4.1. Over Current Protection.....	4
4.2. Short Circuit Protection	4
5. Environment Requirements	4
5.1. Operating Temperature and Relative Humidity.....	4
5.2. Storage Temperature and Relative Humidity	4
5.3. Vibration.....	4
5.4. Drop in	4
6. Reliability Requirements.....	4
6.1. Burn-in	4
6.2. MTBF Qualification	5
7. EMI/EMS Standards	5
7.1. EMI Standards	5
7.2. EMS Standards.....	5
8. Safety Standards	6
8.1. Dielectric Strength(Hi-pot)	6
8.2. Leakage Current.....	6
8.3. Insulation Resistance	6
8.4. Regulatory Standards.....	6
9. Mach. Outline Drawing.....	7

1. SCOPE

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

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

1.1.Description

- SMPS Adaptor(Wall mount)
 SMPS Adaptor(Desk-top)
- Open Frame
 SMPS Unit (With Case)
- Others

2. Input Characteristics

2.1.Input Voltage & Frequency

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

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

2.2.Input AC Current/AC

1.5Amax. @ 100-240Vac input & Full load

2.3.Inrush Current (cold start)

No component was damaged and the fuse should not blow.

2.4.Average Efficiency

88% min. @ 115Vac/60Hz input & 230Vac/50Hz input (@25%, 50%, 75% and 100% of max load).

2.5.Energy Consumption

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

3. Output Characteristics

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

Output Rate	Rated Load		Output Range	R+N	Remark
	Min. Load	Max. Load			
+25V	0.0A	2.0A	23.75V ~ 26.25V	250mVp-p	100-240V

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF electrolysis 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	Max. Load			
+25V	0.0A	2.0A	$\pm 3\%$	$\pm 5\%$	

3.3.Turn - on Delay Time

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

3.4.Hold-up Time

10mS min. @ Full load &115Vac/60Hz input turn off at worst case.

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

3.5. Rise Time

20mS max. @ Rated load

3.6. Fall Time

20mS max. @ Full load

3.7.Output Overshoot / Undershoot

10% max. When the power on or off

3.8.Output Load Transient Response

output voltage within 22.5-27.5V for load step from 20% to 80%, R/S: 0.5A/uS,
frequency: 100Hz duration and 8mS at 80%.

4. Protection Requirements

4.1.Over Current Protection

Over Current Point Limited: $4.8A < I < 6.5A$ (100Vac-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

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

5. Environment Requirements

5.1.Operating Temperature and Relative Humidity

0°C to +40°C

20%RH to 85%RH

5.2.Storage Temperature and Relative Humidity

-20°C to +70°C

5%RH to 95%RH non-condensing @ Sea level shall be low 5000 meters.

5.3.Vibration

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

5.4.Drop in

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm. Apply one time on all surfaces, totally 6 surfaces. The electric performance and Hi-Pot test must be OK after the drop tests.

6. Reliability Requirements

6.1.Burn-in

The power supply shall be burn-in for 4 Hours under normal input and 80% rated load at $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$

6.2.MTBF Qualification

The MTBF shall be at least 100,000hours at 25°C, 80% max load and nominal input condition

7. EMI/EMS Standards

7.1. EMI Standards

FCC Part 15 Subpart B
GB13837/GB17625.1 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) 80-1000MHz,80%AM(1KHz) sine-wave	A

7-2-3 EN 61000-4-4,electric fast transients(burst) immunity requirement

Coupling	Test level	Test criteria
AC-input	1KV	A
AC-input	2KV	B

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

Surge voltage	Test criteria
Common mode +/-2KV	A
Differential mode +/-1KV	

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

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

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. / 60S (when safety testing).

Primary to Secondary: 3300Vac /5mA max. / 3S (when production).

8.2.Leakage Current

0.25mAmax. at 264Vac / 60Hz

8.3.Insulation Resistance

100MΩ min. at primary to secondary add 500Vdc test voltage

8.4.Regulatory Standards

Type	Country	Standard	State	
UL	USA	UL62368-1	APPROVAL	
CCC	CHINA	GB8898	APPROVAL	
CE	Europe	EN62368-1	APPROVAL	
UKCA	UK	EN62368-1	APPROVAL	

9. Mach. Outline Drawing

