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SPECIFICATION FOR REFERENCE

CUSTOMER： _____

CUSTOMER P.N.： _____

MODEL NO.： MS-V1000U050-006C0-DE

PRODUCT NO.： SCXXX-V0/XXXXXX

SAMPLE DATE： 2023-09-07

CUSTOMER AUTHORIZED SIGNATURE		

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

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

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

Rev.	Description of Change		Changed Date	ECN No.
	Before	After		
A1	Original Release	---	2023-09-07	---

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** Table of Content **

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1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 5W continuous output power.

The power supply shall meet the **HSF** 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	50Hz/60Hz	63Hz

2.2. Input AC Current

0.15A max. @ 100-240Vac input & Full load.

2.3. Inrush Current (cold start)

40A max. @ 100-240Vac input.

2.4. Average Efficiency

73.8% min.@115/230Vac input (@25%,50%,75% and100% of max load)

2.5. Energy Consumption

No load Consumption ≤0.1W(115/230Vac input).

3. Output Characteristics

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

Output	Rated Load		Output Range	R+N	Remark
Rate	Min. Load	Max. Load			
+5.0V	0.0A	1A	4.5V~ 5.5V	<200mVp-p	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).

3.2. Line/ Load Regulation

Output	Load Condition		Line Regulation	Load Regulation	Remark
Rate	Min. Load	Max. Load			
+5.0V	0.0A	1A	±5%	±5%	

3.3. Turn - on Delay Time

3S max. @ 100Vac/60Hz input & Full load.

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3.4. Hold-up Time

8mS min. @ full load &115Vac/60Hz input turn off at worst case;

3.5. Rise Time

30mS max. from 10% to 90% DC output voltage, monotonously.

3.6. Fall Time

30mS max. @ Full load

3.7. Output Overshoot / Undershoot

20% max. When the power on or off, when it is the full input voltage and full load.

3.8. Output Load Transient Response

Condition ： load step from 50% to 100% to 50%, R/S: 0.5A/uS, Transient Response Recovery Time :5mS,Result: <10% (Dynamic Voltage)

4. Protection Requirements

4.1. Over Current Protection

Over Current Point Limited: 1.5A > I > 1.0A max. (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.

4.2. 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/offpowering after removal of the over voltage condition.

4.3. Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shallno damage, and shall be self-recovery when the fault condition is removed.

5. Environment Requirements

5.1. Operating Temperature and Relative Humidity

0℃ to +40℃

25%RH to 90%RH

5.2. Storage Temperature and Relative Humidity

-20℃ to +70℃

10%RH to 90%RH non-condensing @ Sea level shall be low 2,000 meters.

5.3. Vibration

10 to 55Hz sweep at a constant acceleration of 10G's rms (Breadth: 1.0mm) for 15 minutes 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, Apply one times on all surfaces, total 6 times. The electric performance and Hi-Pot test must be OK after the drop tests.

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6. Reliability Requirements

6.1. Burn-in and Life test

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.

6.2. MTBF

The MTBF shall be at least 20,000 hours at 25℃, under 100% load and 100V/240VAC input condition.

6.3. E-caps lifetime

The E-caps used in this PSU must be with lifetime of 8760 Hours at 25℃ of full load.
>3 years @ 1.0A load 5hrs/day

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	+/-8KV	B
Contact discharge	+/-6KV	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	2KV	B
AC-input	1KV	B

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

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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. / 60 second.

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

8.2. Leakage Current

0.25mA max at 264Vac / 60Hz.

8.3. Insulation Resistance

10MΩ min. at primary to secondary add 500Vdc test voltage.

8.4. Regulatory Standards

Type	Country	Standard	State	Note
CE	Europe	EN62368-1	APPROVAL	

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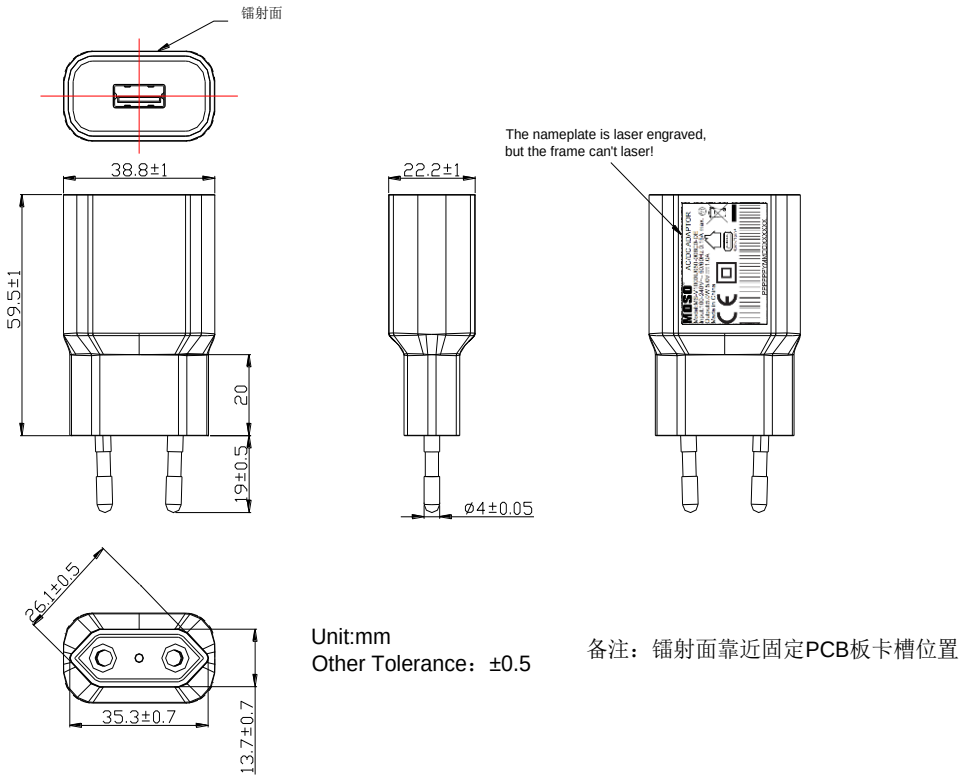
9. Mechanical Outline Drawing



Unit:mm
Other Tolerance：±0.5

备注：镭射面靠近固定PCB板卡槽位置

Case material: ■PC temperature resistance: 125℃.
□PC+ABS temperature resistance: 95℃.

Remark: 1) PC material compliances with ball pressure testing requirement.
2) The color of enclosure is black.

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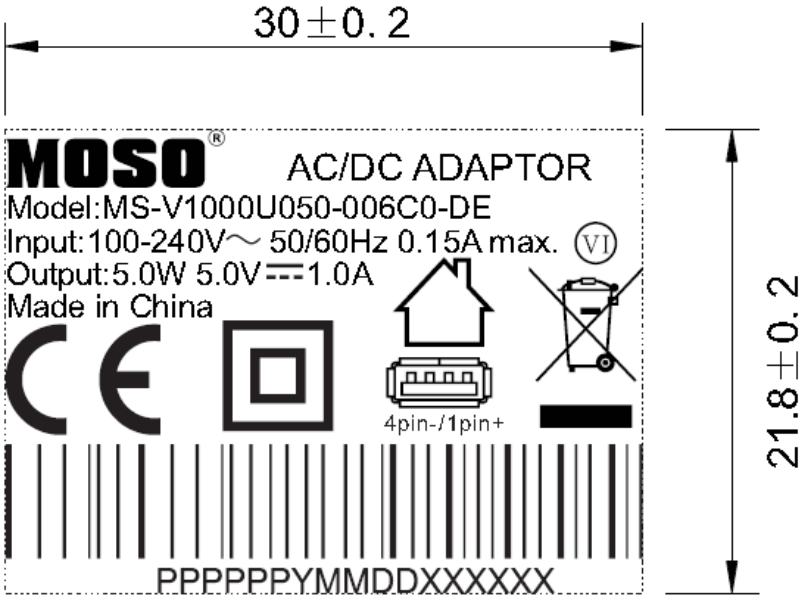
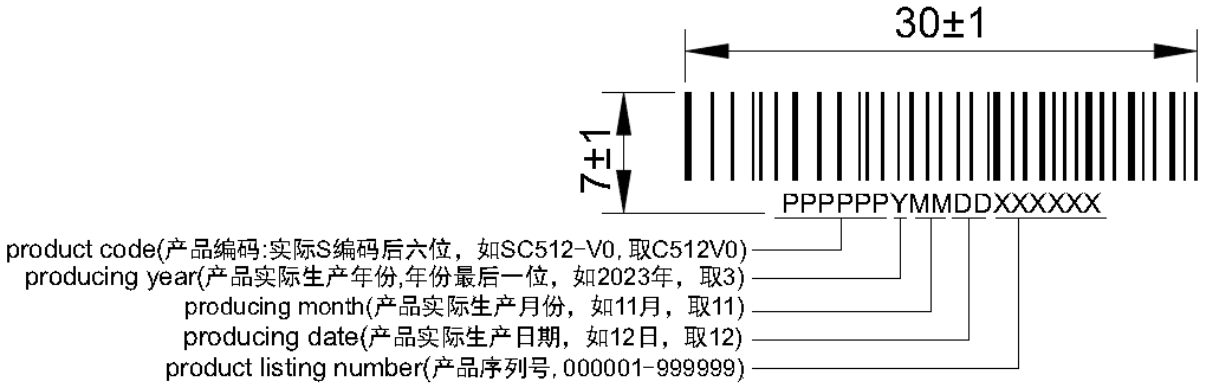
10. I/O Marking Drawing



Remark:
1. Above label is laser engraved.
2. The dimension of double insulation mark can not less than 5mm.
3. The dimension of garbage bin mark can not less than 7mm.



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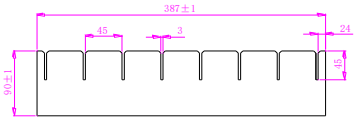
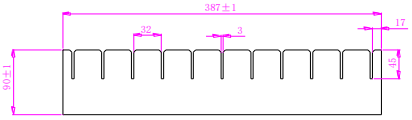
11. Package Drawing



Partitioning card 8: 387*90



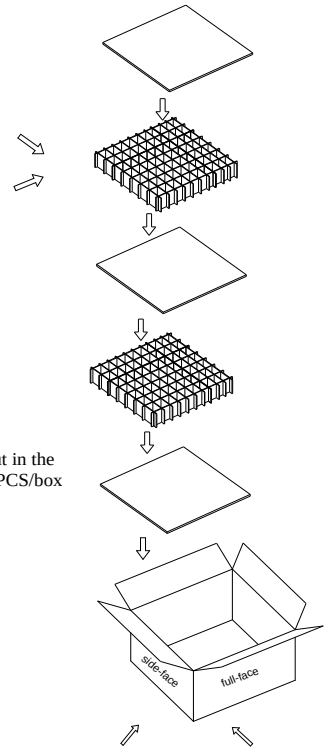
Partitioning card 11: 387*90

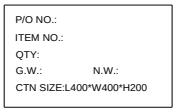
Packing Instruction：

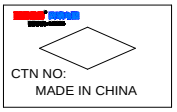
I. the product put in the PE bag, then the packing product put in the pattitioning card groove, 70PCS/floor, 2 floors in all, 140PCS/box such as：70pcs/floor*2floor=140PCS/box

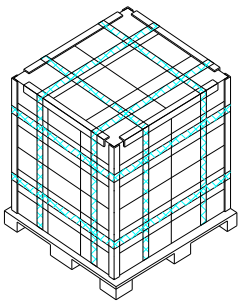
II. the usage of the packing materials：
1. the usage of the 8 partitioning card 387*90：22PCS
2. the usage of the 11 partitioning card 387*90：16PCS
3. the usage of the PE bag 150*120：140PCS
4. the usage of the flat 386*386:3PCS
5. carton box 400*400*200：1PCS

III. Pallet stacke instruction:
1. Pallet size is:L1000*W800*H135mm
2. per floor set 4pcs
3. stacke per 5floor*4pcs carton total 20 pcs carton

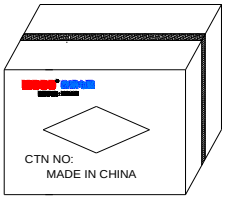








The pallet stack drawing



The product will be packed in the carton box and the box will be seled by the sticker

The requirement of PE bag packing: ☐PE bag without sealing by adhesive tape.

☐ PE bag with sealing by adhesive tape.

☐Other requirement

Remark: If the customer has not chose the PE bag packing way,

We will use the PE bag without sealing by adhesive tape..