

参考规格书

SPECIFICATION FOR REFERENCE

CUSTOMER: 客 户:	
CUSTOMER P.N.: 客户料号:	
MODEL NO.: 产品型号:	T30-P695J360-250B0
PRODUCT NO.: 产品编号:	SCXXX-F0
SAMPLE DATE: 送样日期:	2024-03-13

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。

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Reviser 修订	Confirm 确认	Checked 审查	Approval 批准

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1. SCOPE/范围

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 250W continuous output power.

资料详细描述了一款 **250 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 HSF requirement.

此款电源符合 **HSF** 要求。

1.1.Description /类型

- 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

1.2.Green Requirements/环保要求

- RoHS:2011/65/EU & (EU) 2015/863;
 REACH:1907/2006/EC;
 Halogen-free:IEC 61249-2-21;
 CA Prop 65;
 POPs:(EU)2023/1608;
 PAHs: 2005/69/EC;
 Packaging Directive:94/62/EC;
 US EPA Toxic Substances Control Act (TSCA);
 MOSO Environmental standards: WI-QM006-G;
 Others

1.3.Energy Efficiency Requirements/能效要求

No.	Country/国家地区	Energy efficiency abbreviation/能效简称	Whether it meets the requirements/是否符合(YES/是 <input checked="" type="checkbox"/> , NO/否 <input type="checkbox"/>)
1	USA/美国	DoE VI	<input type="checkbox"/>
2		CEC	<input type="checkbox"/>
3	Canada/加拿大	NRCAN	<input type="checkbox"/>
4	Australia/New Zealand/ 澳大利亚/新西兰	GEMS	<input type="checkbox"/>
5	Europe/欧盟	Erp VI	<input type="checkbox"/>
6		CoC V5 Tier 2	<input type="checkbox"/>
7	South Korea/韩国	KMEPS	<input type="checkbox"/>
8	Mexico/墨西哥	MEPS	<input type="checkbox"/>
9	Byelorussia/白俄罗斯	MEPS	<input type="checkbox"/>

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 115Vac/230Vac single phase, switching the input voltage through a switch.

输入电压范围: 从 **115Vac/230Vac**, 单相输入, 通过开关切换输入电压。

	Minimum/最小	Nominal/额定值	Maximum/最大
Input Voltage/输入电压	85Vac	115/230Vac	264Vac
Input Frequency/输入频率	63Hz	50Hz/60Hz	47Hz

2.2. Input AC Current/AC 输入电流

Input Voltage/输入电压	115Vac	230Vac	Full load
Input AC Current/AC 输入电流	3.0A Max	3.0A Max	Full load

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

80A max. @ 230Vac input, at cold start

输入电压 **230Vac** 时, 冷启动输入浪涌电流不超过 **80A**。

2.4. Type Efficiency/典型效率

93% Typical Value @ 230Vac/50Hz input @ full load.

Meet 80 Plus Silver standard

输入电压为 **230V/50Hz**, 输出满载的时候, 能效典型值达到 **93%**。

符合 **80 Plus** 银牌标准。

2.5. Energy Consumption /空载功耗

No load Consumption $\leq 0.5W$ @ 115Vac/60Hz; 230Vac/50Hz

在额定输入 **115Vac /60Hz** 和 **230Vac /50Hz** 时, 空载功耗 $\leq 0.5W$ 。

2.6. Power Factor /功率因数

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

在 **230Vac** 满载时, 功率因素不应低于 **0.9**。

2.7. Power Density/功率密度

12.1 W/in³

2.8. Switching Frequency/工作频率

PFC Converter: 40-200KHz

Main Converter: 80-150KHz

2.9. Input Protection/输入保护

F5.0 A/250 V internal fuse in both lines.

两路 **F5.0 A / 250V** 内部熔丝。

2.10. Weight/重量

360g +/-10%

2.11. Warm up Drift/预热时间

20 min/20 分钟。

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
+36 V	0.0A	6.95A	34.2~37.8V	360mVp-p	115/230V
+12V	0.0A	0.3A	11.4~12.6V	150mVp-p	115/230V/0.3A

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).

All long-term power supply tests must be carried out under 180W load conditions, including temperature rise, Burn-in, etc. The premise of all output tests of 12V is that 36V output is carried out with load and peak load is 0.6A.

-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 **47uF** 的电解电容. (在额定输入及输出的条件下检测)。

-电源所有需要长期工作的测试, 必须在 **180W** 负载条件下进行, 包括温升, 老化等。

-12V 的所有输出测试的前提是在 **36V** 输出带载的情况下进行, 尖峰负载为 **0.6A**。

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
+ 36V	0.0A	6.95A	± 0.5%	± 0.5%	
+12V	0.0A	0.3A	± 0.5%	± 5%	终端风扇供电

3.3.Turn - on Delay Time/开机延迟时间

3S max. @ 115Vac to 230Vac input & Full load.

输入电压 **115Vac to 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 & 115Vac/60Hz input turn off at 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。

17mS 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 **17** 毫秒。

3.5.Rise Time/上升时间

50 mS max. @ Rated load.

额定负载时, 上升时间不超过 **50** 毫秒。

3.6.Fall Time/下降时间

30 mS 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 34.2~37.8 V for load step from 50% to 75% to 50% R/S: 0.25A/uS, Transient Response Recovery Time :500uS, Dynamic response overshoot $\pm 5\%$.

输出电压在 34.2~37.8 V 之间,负载变化: 从 50% to 75% to 50%斜率: 0.25A/uS,动态响应恢复时间: 500uS, 动态响应过冲 $\pm 5\%$ 。

4. Protection Requirements/保护要求

4.1. Over Power Protection/过载保护

Over Power Point Limited/过载点限制: (110%~200%Full load 6.95A @115/230Vac)

The output shall hiccup when the over power 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 36V short, the power supply shall no damage, and shall be auto-recovery when the fault condition is removed.

当输出 36V 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 come back to nominal working after removal of the over voltage condition. ($39.6 \leq V \leq 50.4$)

输出过压时,产品产品保护,当过压情况解除后,产品恢复正常, ($39.6 \leq V \leq 50.4$) 。

4.4. Over temperature protection/过温保护

When the power supply is over temperature protected, the power supply will enter the setting working mode, and the output will be automatically restored after the abnormal removal. (Max 110°C protection)

当过温度保护时,产品进入打嗝模式,当过温情况解除后,产品自动恢复正常输出。(最大 110°C 保护)

5. Environment Requirements/环境要求

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

-40°C to +70°C

10%RH to 90%RH

-Fan cooled: -40°C to 50°C operation with full load 6.95A, 50°C to 70°C operation derated to half-load.

-Convection cooled: -40°C to 40°C operation with load 5.0A.

带风机散热: -40°C 到 50°C 环温满载 6.95A 运行, 50°C 至 70°C 降额至半载运行。

无风机散热: -40°C 到 40°C 环温带载 5.0A 运行。

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

-40°C to +85°C

5%RH to 95%RH non-condensing

5.3.Sea level shall be low 5.000 meters/低于 5000 米.

5.4.Vibration/振动

Single axis 10 - 500 Hz at 2g sweep and endurance at resonance in all 3 planes.
Conforms to EN60068-2-6

单轴 10 - 500 赫兹在 2g 扫描和耐力在三个平面都有共振。符合 EN60068-2-6 标准。

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 % of 5A load at 40°C产品至少要在40°C的环境及 5A负载的80%条件下煲机2小时。

6.2.MTBF

The MTBF of power supply shall be over than 500,000 Hours @ 25°C of load 5A.

MTBF calculation done according Bellcore SR-332.

产品的 MTBF 寿命在 25°C 的环境及 5A 负载的条件下至少达到 50 万小时。

MTBF 计算根据是: SR-332.

7. EMI/EMS Standards/EMI/EMS 标准

7.1.EMI Standards/EMI 标准

EMI	Standards
Radiated Emission	*EN55032, CLASS A
Conduction Emission	*EN55032, CLASS B

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	+/- 8 KV	A
Contact discharge/接触放电	+/- 4KV	A

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
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/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	0.5KV	A
AC-input/交流输入	1KV	A

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 +/- 4KV	A
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	Test criteria/测试标准
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)

I/P- O/P: 4KVac / 10 mA max. / 60 second .

输入对输出:4KVac / 10mA max. / 60 秒.

I/P-FG: 1.5KVac / 10 mA max. / 60 second .

输入对地: 1.5KVac / 10 mA max. / 60 秒

O/P-FG: 1.5K Vac / 10 mA max. / second.

输出对地: 1.5KVac / 10mA max. / 60 秒.

8.2.Leakage Current/漏电流

0.25mA max. at 264Vac/60Hz.

输入 264Vac/60Hz ,漏电流小于 0.25mA

8.3.Insulation Resistance/绝缘阻抗

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

在初级与次级间加 500Vdc 进行测试.

8.4.Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	Note/备注
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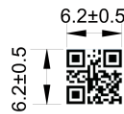
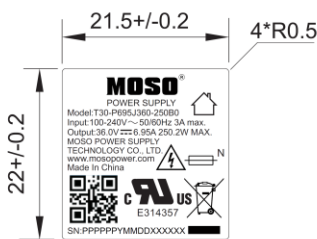
CE	Europe	EN62368-1	MEET	
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9. Mechanical Outline Drawing/外观示意图

输出端子接线图:

Input Connector AC		Output Connector J2		Fan Connector J3		Signal Connector J4	
Pin	Function	Pin	Single Output	Pin	Function	Pin	Single Output
1	Line	1	+V	1	Fan+(12V)	1	+Sense
2	Neutral	2	+V	2	Fan-	2	-Sense
		3	+V			3	Internal Use
		4	RTN			4	Inhibit LO
		5	RTN			5	Inhibit HI
		6	RTN			6	N/C
						7	N/C
						8	N/C
						9	N/C
						10	N/C

10. I/O Marking Drawing/铭牌示意图



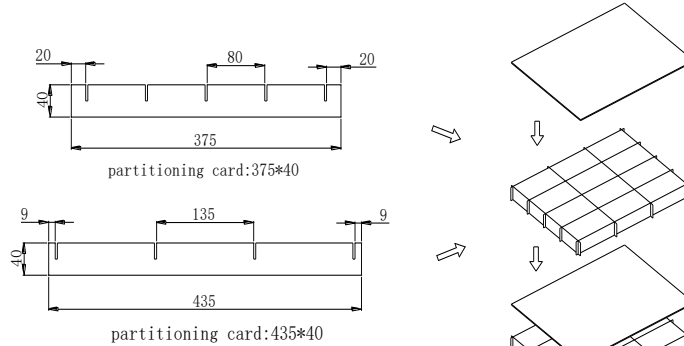
二维码格式/Code format: QR code
 二维码尺寸/Code size :6.2*6.2mm(±0.5)
 二维码扫描内容/Code content:PPPPPYMMDDXXXXXX 总共17位,内容与下方SN内容保持一致
 二维码解析如下/Code analysis:
 PPPPP:product code(产品编码;实际S编码后六位,如SC231-F0,取C231F0)
 Y:producing year(产品实际生产年份,年份最后一位,如2023年,取3)
 MM:producing month(产品实际生产月份,如02月,取02)
 DD:producing date(产品实际生产日期,如15日,取15)
 XXXXX:product listing number(产品序列号,000001-999999)
 SN:PPPPPYMMDDXXXXXX 字体Arial

备注/Remark:

- 1、材质/Material:50#PET+光膜 (Light film) .
- 2、颜色/Color: black character with white background (白底黑字) .
- 3、符合REACH,HSF及茂硕环保要求/REACH,HSF and conform to MOSO Renviroment Protection Request.
- 4、铭牌粘帖到散热片上24小时后,温度90°C情况下,24h内不翘角,不脱落,不起泡/After the nameplate is pasted to the heat sink for 24 hours, the temperature is 90°C, and there is no warping Angle, no falling off, and no foaming within 24 hours
- 6、酒精擦拭和清水各擦15秒,用100克的砝码包棉布擦,字体清晰可见,无其他不良(如卷边、翘角等)
Wiping test standard:water and alcohol wiped both 15s after no damage.
- 7、铭牌来料清晰,无污点、破损、折痕,无断字、印字歪斜及切割等不良.
nameplate incoming material is clear, no stain, damage, crease, no hyphenation, printing skew and cutting bad.
- 8、CE认证标识高度不小于5mm/The size of CE certified logo is no less than 5mm.

符合茂硕环保要求

11. Packing instructions/包装说明



Packing Instruction:

I. the product put in the bag ,then the packing product put in the partitioning card groove, 12PCS/floor, 5 floors in all, 60PCS/box

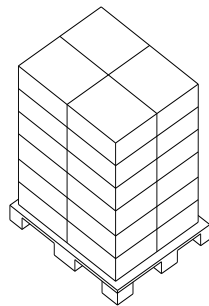
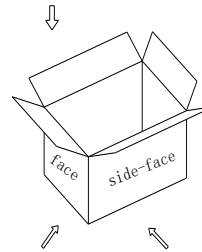
such as: 12pcs/floor*5floor=60PCS/box

II. the usage of the packing materials:

1. the usage of the 11 partitioning card 435*375*40: 5PCS
2. the usage of the bag 180*130: 60PCS
3. the usage of the flat 435*375: 6PCS
4. carton box 450*390*235: 1PCS

III. Pallet stacking instruction:

1. Pallet size is: L1000*W800*H100mm
2. per floor set 4pcs
3. stacke per 6floor*4pcs carton total 24pcs carton

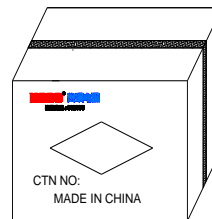


Pallet stacking diagram

P/O NO.:
ITEM NO.:
QTY:
G.W.: N.W.:
CTN SIZE: L450*W390*H235

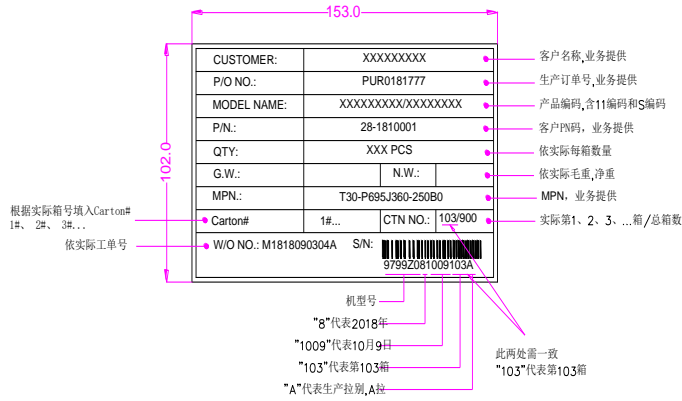
CTN NO.:
MADE IN CHINA

450L*390W*235H



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

Carton label



备注:

1. 材质: 80P铜版纸(来料为空白标签)
2. 颜色: 白底黑字, 公司内部打印
3. 背附胶, 粘贴在纸箱上后, 无翘边等不良;
4. 符合ROHS标准及茂硕环保要求
5. 使用空白料号3230200011