

1. SCOPE/概述

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 5.0 W continuous output power.

资料详细描述了一款 5.0W(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.

Description/描述:

- 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

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	Normal/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current/AC 输入电流

0.2Amax. @ 115Vac input & Full load/在 115Vac 输入和满载条件下最大 0.2A

0.2Amax. @ 230Vac input & Full load/在 230Vac 输入和满载条件下最大 0.2A

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

30Amax. @ 220Vac input/在 220Vac 输入条件下最大 30A

2.4. Average Efficiency /平均效率

While input 115Vac and 230Vac, the average efficiency is more than 68.17%.The test point is at 25%, 50%, 75% and 100% of max load respectively.

在输入 115Vac 和 230Vac 条件下,平均效率不小于 68.17%。测试点分别是最大载的 25%,50%,75%和 100%。

2.5. No-Load Input Power Dissipation/输入空载功率损耗

Input 90Vac or 264Vac, output no load, the input power loss is less than 0.15W.

输入 90/264V 交流, 在输出空载条件, 输入功耗小于 0.15W

2.6. Flow Backward Electric Current Tests/倒灌电流测试

When cut down AC power, input 0—5V DC power into charger, the current should less than 5mA.

当充电器不接交流电的条件下,在充电器输出端加入 0—5VDC 直流电压,通过充电器的电流应小于 5mA.

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
Rail	Rated Load	Range CV: 2.0-4.75V	输出电压范围	纹波与噪声	备注
+5.0V	1.0A	1.0-1.3A	4.75V ~ 5.25V	200mVp-p	

1. Load range CV: Under the input Voltage 100 Vac~240Vac.

CV 模式测试在 100Vac~240Vac 输入条件下测试。

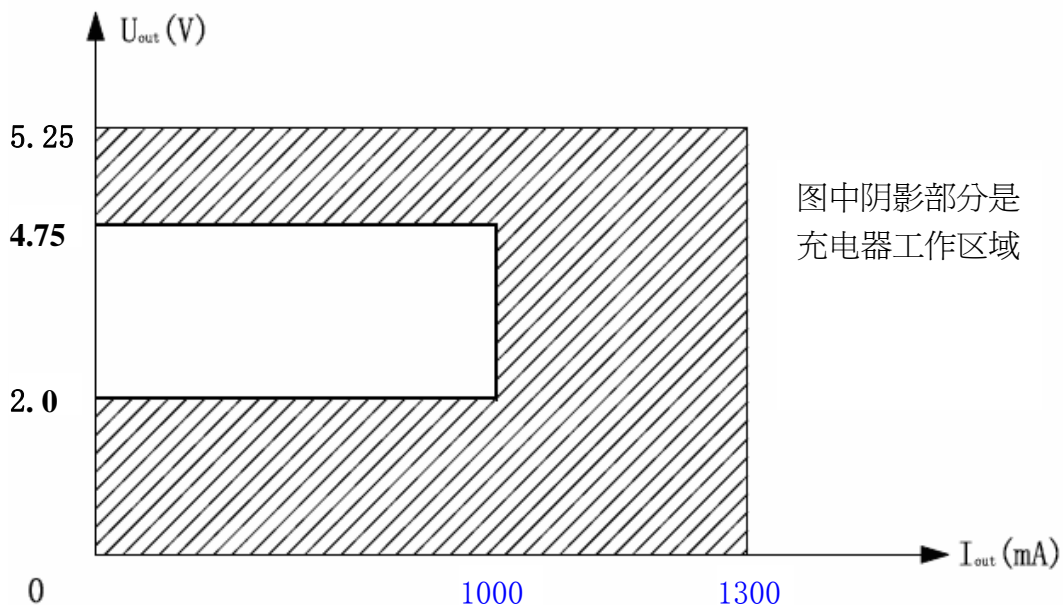
2. Under the input Voltage > 100 Vac

测试在 > 100Vac 输入条件下测试

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 1uF ceramic capacitor.

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 1uF 的陶瓷电容

3.2. Charger Output Voltage/Current Characteristics 充电器输出电压/电流 V-I 特性图



3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 100 Vac to 240Vac input & Full load/在 100Vac-240Vac 输入和满载条件下最大 3S

3.4. Hold-up Time/关机维持时间

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

在 115Vac/60Hz 输入, 满载同时最差情况下关机, 最小 10mS

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

在 230Vac/50Hz 输入, 满载同时最差情况下关机, 最小 20mS

3.5. Rise Time/上升时间

30mS max. @ 70% load/70%负载条件下最大 30mS

3.6. Fall Time/下降时间

20mS max. @ Full load/满载条件下最大 20mS

3.7. Output Overshoot / Undershoot/输出过冲/欠冲

10% max. When the power on or off/当电源开/关机时最大 10%

3.8. Output Load Transient Response/输出负载瞬态响应

1>.output voltage within 4.5-5.5V for load step from 10% to90%, R/S: 0.5A/uS, frequency: 100Hz duration and 9mS at 90%.

输出电压在 4.5-5.5V 之间, 负载变化: 从 10%到 90%,斜率: 0.5A/uS,频率: 100Hz, 90%负载持续时间为 9mS.

2>. Output voltage within 4.5-5.5V for load step from 0% to50%, R/S: 0.5A/uS, frequency: 100Hz duration and 8mS at 50%.

输出电压在 4.5-5.5V 之间, 负载变化: 从 0%到 50%,斜率: 0.5A/uS,频率: 100Hz, 50%负载持续时间为 8mS.

3.9.Capacitance Load/容性负载

While input 100~240Vac and capacitance load is 2200uF, the adapter can turn on normally and the output is in the rated range.

在输入 100~240Vac, 2200uF 容性负载条件下, 适配器能正常开机。并且输出电压范围在额定范围下

4. Protection Requirements/保护要求

4.1.Over Current Protection/过流保护

OCP Point Limited: 200%max of Io-rated /保护点限制:最大为额定负载的 200%

The output shall hiccup when the over current applied to the output, and shall be self-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 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

OVP Point Limited: 7.5VMax. Load/保护点限制:最大 7.5V。

The power supply shall be protected when the output is over voltage, and the power supply shall not be damaged.

当输出过压时,产品保护且不会损伤

5. Environment Requirements/环境要求

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

0°C to +40°C

20%RH to 80%RH

Note: The power adapter can operate normally at -10°C/+45°C.

电源在-10°C/+45°C能正常工作。

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 @ Sea level shall be low 10,000 feet/低于 10,000 英尺

5.3. Vibration/振动

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

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时

5.4. Drop in/跌落

1 Corner, 3 Edges, 6 Surfaces, Height: 100cm, On the cement plane

1 角, 3 棱, 6 面, 跌落高度: 100 厘米, 跌落到水泥面上

6. Reliability Requirements/可靠性要求

6.1. MTBF Qualification/平均间隔故障时间估算

The MTBF shall be at least 50,000hours at 25°C,80% Full load and nominal input condition

平均间隔故障时间: 至少 50,000 小时,25°C 环境及额定输入与 80%满载条件下

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

EN 55022:1998, +A1:2000 +A2:2003, Class B

CISPR 22:2003, Class B

AS/NZS CISPR 22: 2004, Class B

7.2. EMS Standards/EMS 标准

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 6kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient/Burst-EFT
EN 61000-4-5	Surge Immunity Test: Differential mode $\pm 1kV$,Common mode $\pm 2kV$
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips

8. Safety Standards/安规标准

8.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压)

Primary to Secondary: 3000Vac / 3.5mA / 60second(3second for production)
or 4242Vdc / 3.5mA / 60second(3second for production)

初级对次级: 3000Vac / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

或 4242Vdc / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

8.2. Leakage Current/漏电流

0.25mAmax. at 250Vac / 50Hz/在输入 250Vac/50Hz 的条件下最大 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，绝缘阻抗最小 100 MΩ。

8.4. Regulatory Standards/安规标准

Type	Country	Standard	Type	Country	Standard
<input type="checkbox"/> UL/CUL	USA	UL60950-1	<input type="checkbox"/> PSB	Singapore	IEC60950-1
<input type="checkbox"/> TUV	Europe	EN60950-1	<input type="checkbox"/> PSE	Japan	J60950
<input checked="" type="checkbox"/> CCC	China	GB4943	<input type="checkbox"/> NOM	Mexico	NOM-001
<input type="checkbox"/> CE	Europe	EN60950-1	<input type="checkbox"/> GOST	Russia	MEK60950

9. Mach. Outline Drawing/外观图

