

Specification For 5 Watts/ Switching Mode Power Supply

Product No./产品编号:	Model No./产品型号:HKA00605010-2E
Customer/客户:	File No./文件编号:
Revision/版本: 1	Date/日期: 2010-10-11

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客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/ 客户 : _____

CUSTOMER P.N./客户物料号 : _____

MODEL NO./ 产品型号 : HKA00605010-2EAPPROVAL NO./ 承认编号 : WI-F-20101015PREPARED DATE/拟定日期 : 2010-10-11

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核

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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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1. SCOPE/概述

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

资料详细描述了一款 5 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 **RoHS** requirements.

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 with a single phase.

输入电压范围: 从 90Vac 到 264Vac, 单相输入.

	Minimum/最小	Rating/额定值	Maximum/最大
Input Voltage/输入电压	90Vac (60HZ)	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current/输入交流电流

0.25Amax. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 0.25A

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

30Amax. @ 132Vac input/在 132Vac 输入条件下最大 30A

40Amax. @ 264Vac input/在 264Vac 输入条件下最大 40A

2.4. Average Efficiency /平均效率

While input 115Vac and 230Vac, the average efficiency is more than 68.3%. 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 68.3%。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

While input 115Vac or 230Vac and the output is no load, the input power loss must be less than 0.30W.

在输入 115Vac/230Vac, 空载功耗小于 0.30W.

3. Output Characteristics/输出特性

3.1. Static Output Characteristics <Vo & R+N>/静态输出特性<输出&纹波+噪音>

Output Rating	Rated Load/额定负载		Peak Load	Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load				
+5.0V	0A	1.0A	/	4.75V ~ 5.25V	120mVp-p	

Ripple & Noise: Tested by a oscilloscope using 20MHz bandwidth and the output is paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (Under the input Voltage 100~240Vac)

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 10uF 的电解电容(输入电压 100~240Vac)

3.2. Line/ Load Regulation/线性/负载调整率

Output	Load Condition/负载条件		Line Regulation	Load Regulation	Remark
Rating	Min. Load	Max. Load	线性调整率	负载调整率	备注
+5.0V	0A	1.0A	±2%	±5%	

3.3. Turn - on Delay Time/开机延迟时间

2S max. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 2S

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 输入, 满载同时最差情况下关机, 最小 10mS

10mS min. @ Full load & 230Vac/50Hz input turn off at worst case

在 230Vac 输入, 满载同时最差情况下关机, 最小 10mS

3.5. Rise Time/上升时间

30mS max. @ Full load/在满载条件下最大 30mS

3.6. Fall Time/下降时间

20mS max. @ Full load/在满载条件下最大 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

Output voltage is within 4.5~5.5V while the load step is from 20% to 80% of max load, R/S: 0.5A/uS, frequency: 100Hz, and 8mS duration at 80% of max load.

输出电压在 4.5~5.5V 之间,负载变化: 从最大载的 20%到 80%,斜率: 0.5A/uS,频率: 100Hz, 80%负载持续时间为 8mS.

4. Protection Requirements/保护要求

4.1. Over Current Protection/过流保护

OCP Point Range: <200% of Max. Load/保护点范围: 小于最大负载的 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 is short to GND, the power supply shall not damage, and shall be self-recovery when the fault condition is removed

当输出对地短路时,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 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/操作温度和湿度要求

0□ to +40□

10%RH to 90%RH

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

-40□ to +70□

5%RH to 95%RH (non-condensing) @ Sea level shall below 10,000 feet

在海拔低于 10,000 英尺的条件下, 低温存储下限为-40□ (无结冰环境); 高温存储上限为 +70□,相对湿度为 10%RH to 90%RH。

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 each once. Drop on the cement plane, Height: 100cm,

1 角, 3 棱, 6 面各 1 次, 跌落到水泥面上, 高度: 100 厘米

6. Reliability Requirements/可靠性要求

6.1. MTBF Qualification/平均间隔故障时间估算

6.2.1 The MTBF Prediction shall be at least 300,000hours at 40°C, Full load and normal input condition (Standards: Telecordia SR-332, Issue 2)

平均间隔故障时间预测试, 至少 300,000 小时,40°C 环境及额定输入与满载条件下 (参照标准: Telecordia SR-332, Issue 2)

6.2.2 The MTBF Demonstration shall be at least 30,000hours at 40°C, Full load and normal input condition (Standards: MIL-STD-781C)

平均间隔故障时间实测验证, 至少 30,000 小时,40°C 环境及额定输入与满载条件下 (参照标准: MIL-STD-781C)

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: AC Power Line: line to line 2.5kV, line to earth 4kV
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 / 60 seconds(3 seconds for production)
or 4242Vdc / 3.5mA / 60 seconds(3 seconds 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 264Vac / 50Hz input/在输入 264Vac/50Hz 的条件下最大 0.25mA

8.3. Insulation Resistance/绝缘阻抗

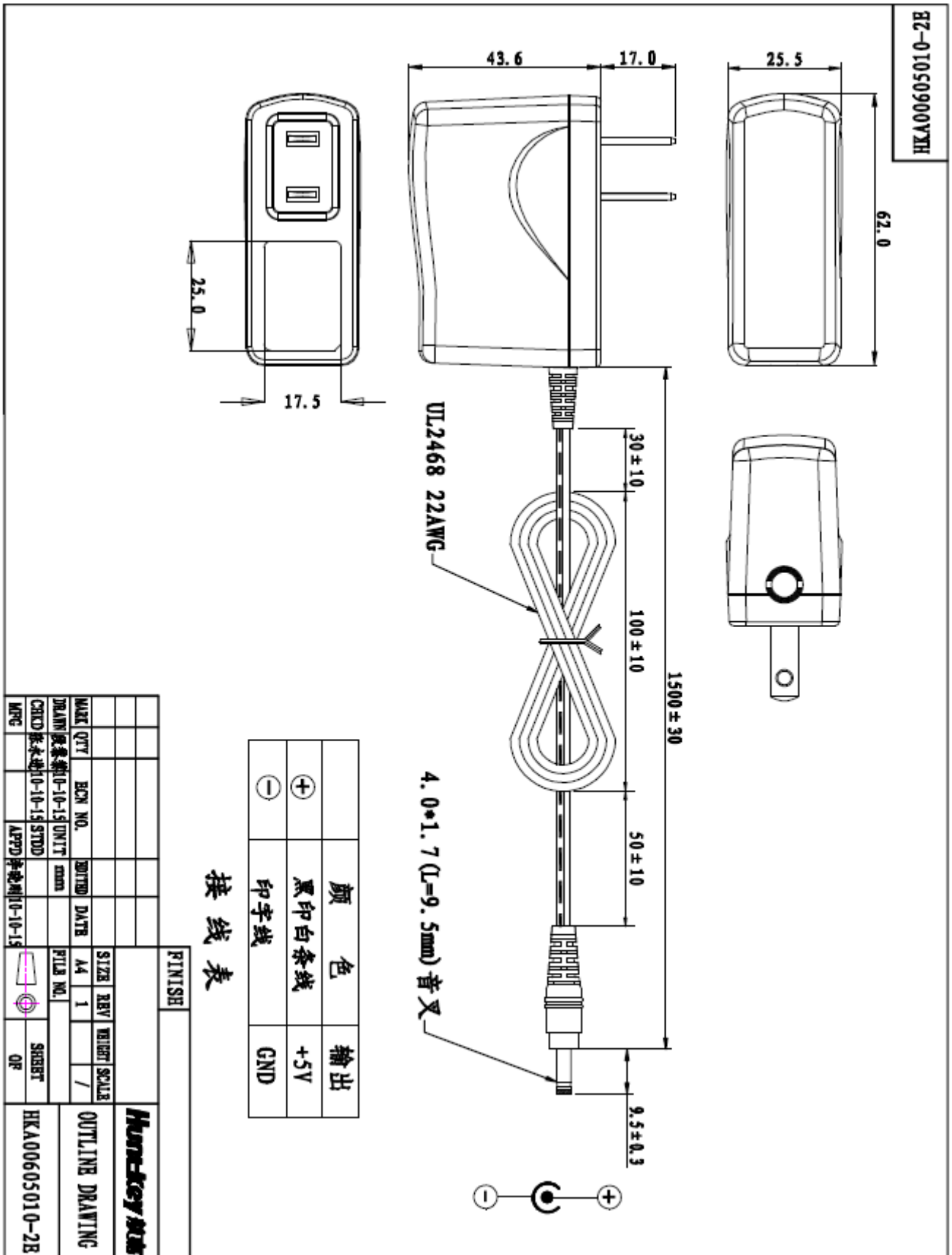
20MΩ min. @ primary to secondary add a 500Vdc test voltage

在初级与次级间加 500Vdc 进行测试,最小 20MΩ

8.4. Regulatory Standards/安规标准

Type	Country	Standard	Type	Country	Standard
<input checked="" 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 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



10. Label Drawing/标贴图

11. Package Drawing/包装示意图

