客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/ 客户： 日本分公司

CUSTOMER P.N./客户物料号：

MODEL NO./ 产品型号： HKA01812015-2D

APPROVAL NO./ 承认编号： WI-F-20091227

PREPARED DATE/拟定日期： 2009-12-9

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核		

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E. C. LIST/变更履历表

Rev. 版本	Description of Change/变更内容描述 Before/变更前	 After/变更后	Changed Date/日期	ECN No.
1	Original Release	---	2009-12-9	---

Contents/目录

1. SCOPE/概述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provides 18 W continuous output power.

资料详细描述了一款 18W(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	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current/输入交流电流

0.5Amax. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 0.5A

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

70Amax. @ 264Vac input/在 264Vac 输入条件下最大 70A

2.4. Average Efficiency /平均效率

While input 115Vac and 230Vac,the average efficiency is more than 76.01%.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 76.01%。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	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
Rating	Min. Load	Max. Load				
+12.0V	0A	1.5A	/	11.4V ~ 12.6V	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
+12.0V	0A	1.5A	±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/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

20mS max. @ Full load/在满载条件下最大 20mS

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

5% max. When the power on or off/当电源开，关机时最大 5%

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

Output voltage is within 11.4-12.6V 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 11.4-12.6V 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 Limited: 110%~200% of Max. Load/保护点限制: 最大负载的 110%~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/工作环境温度为 0～40℃，湿度为 10%～90%

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

-20℃ to +80℃

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-20℃（无结冰环境）；高温存储上限为 +80℃,相对湿度为 5%RH to 95%RH。

6. Reliability Requirements/可靠性要求

6.1. Burn-in/煲机

The power supply shall be burned-in at least 4 hours at 35℃±5℃ under full load condition./产品至少要在 35℃±5℃的环境及满载条件下煲机 4 小时

6.2. The lifetime of electrolyte capacitors/电解电容寿命

The lifetime of electrolyte capacitors shall be at least 43,800 hours at 25℃, Full load and normal input condition.

在环境温度为 25℃、额定输入电压和满载条件下，电解电容的寿命最少为 43800 小时。

6.3. 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

6.4. 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

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, 4kV 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 1kV, line to earth 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 / 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

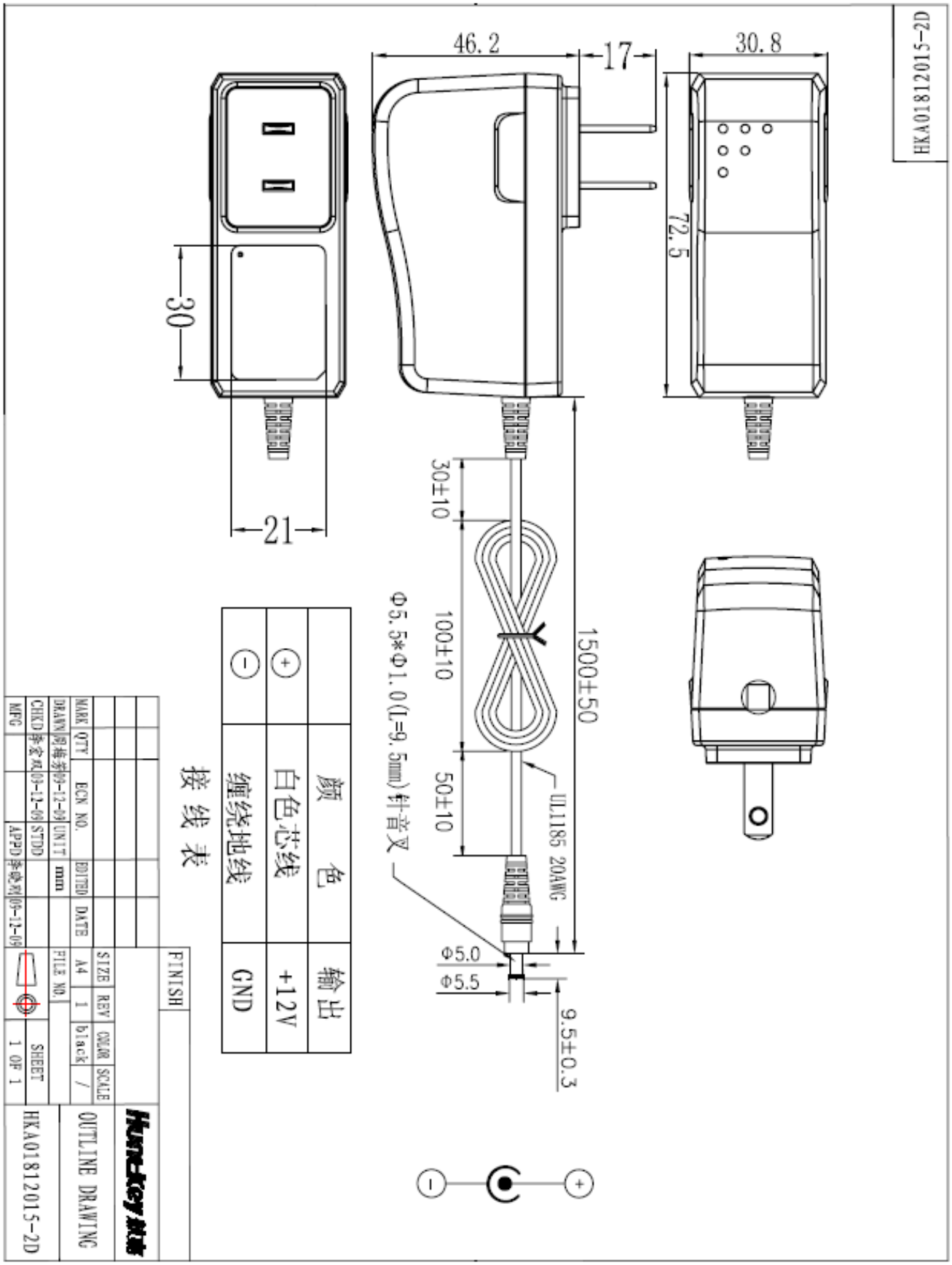
100MΩ min. @ primary to secondary add a 500Vdc test voltage

在初级与次级间加 500Vdc 进行测试,最小 100MΩ

8.4. Regulatory Standards/安规标准

Type	Country	Standard	Type	Country	Standard
☐ UL/CUL	USA	UL60950-1	☐ PSB	Singapore	IEC60950-1
☐ TUV	Europe	EN60950-1	☐ PSE	Japan	J60950
☐ CCC	China	GB4943	☐ NOM	Mexico	NOM-001
☐ CE	Europe	EN60950-1	☐ GOST	Russia	MEK60950

9. Mach. Outline Drawing/外观图



10. Label Drawing/标贴图

11. Package Drawing/包装示意图