

Specification For 12 Watts/ Switching Mode Power Supply

Product No./产品编号: P23-012127Q03R	Model No./产品型号: HKA01212010-1Y
Customer/客户: 标准品	File No./文件编号: 试产
Revision/版本: T02	Date/日期: 2017-10-18

TABLE OF CONTENTS/目录清单

1.	Table of Contents/目录清单	<input type="checkbox"/>
2.	Approval Sheet Cover/客户承认书封页	<input type="checkbox"/>
3.	E.C. List/变更履历表	<input type="checkbox"/>
4.	Electrical Specification/电气特性	<input type="checkbox"/>
5.	Environment Requirements/环境要求	<input type="checkbox"/>
6.	Reliability Requirements/可靠性要求	<input type="checkbox"/>
7.	EMI/EMS Standards/传导与辐射标准	<input type="checkbox"/>
8.	Safety Standards/安规标准	<input type="checkbox"/>
9.	Mach. Outline Drawing/外观图	<input type="checkbox"/>
10.	Label Drawing/标贴图	<input type="checkbox"/>
11.	Package Drawing/包装示意图	<input type="checkbox"/>
12.	Samples Test Report/样品测试报告	<input type="checkbox"/>
13.	DC/AC Cord Drawing/DC/AC 线材图	<input type="checkbox"/>
14.	Circuit Schematic Drawing/电路图	<input type="checkbox"/>
15.	Other Mach. Drawing/其他结构件图	<input type="checkbox"/>
16.	Bill Of Material (BOM)/产品物料清单	<input type="checkbox"/>

Prepared By : 拟 制:	陈绪章	Checked By : 审 核:	朱学磊	Approved By : 批 准:	刘建辉
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客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/客户: 标准品

CUSTOMER P.N./客户物料号: _____

MODEL NO./产品型号: HKA01212010-1Y

APPROVAL NO./承认编号: _____

PREPARED DATE/拟定日期: 2017-10-18

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.

ADD: Huntkey Park, Banxue Road, Bantian, Shenzhen,
Guangdong, P. R. China

TEL: 0755-89606666

P.C.: 518129

FAX: 0755-89606333

<http://www.huntkey.com>

拟 制:	审 核:	批 准:

** Table Of Content/目录 **

1. SCOPE/概述.....	4
2. Input Characteristics/输入特性.....	4
3. Output Characteristics/输出特性.....	4
4. Protection Requirements/保护要求.....	5
5. Environment Requirements/环境要求.....	6
6. Reliability Requirements/可靠性要求.....	6
7. EMI/EMS Standards/EMI/EMS 标准.....	7
8. Safety Standards/安规标准.....	7
9. Mach. Outline Drawing/外观图.....	8
10. Packing Drawing/包装图.....	9

1. SCOPE/概述

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 12.0 W continuous output power.

资料详细描述了一款 12.0W(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 Adapter (Wall mount)/插墙式适配器 SMPS Adapter(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

0.5Amax. @ 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)

Power supply inrush current shall be less than the ratings of its critical components (including bulk rectifiers, fuses, and surge limiting device) under all conditions of line voltage of Section 2.1.

在 2.1 中所有输入条件下, 浪涌电流应小于关键器件的额定值(包括保险丝、桥整等浪涌限制元件)。

2.4. Average Efficiency /平均效率

While input 115Vac and 230Vac, the average efficiency is more than 83.26%.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 83.26%。测试点分别是最大载的 25%,50%,75% 和 100%

While input 115Vac and 230Vac, the 10% of max load efficiency is more than 73.3%

在输入 115Vac 和 230Vac 条件下, 10% 负载效率不小于 73.3%

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

Input 230Vac, output no load, the input power loss is less than 0.075W.

输入 230Vac, 在输出空载条件, 输入功耗小于 0.075W

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
Rating	Rated. Load	输出电压范围	纹波与噪声	备注

+12.0V	1.0A	11.4V ~ 12.6V	180mVp-p	
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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	1.0A	±2%	±3%	

3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 3S

3.4. Hold-up Time/关机维持时间

5mS 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 5mS

10mS 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 10mS

3.5. Rise Time/上升时间

200mS max. @ Full load/满载条件下最大 200mS

3.6. Fall Time/下降时间

50mS max. @ Full load/满载条件下最大 50mS

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 25% to 50% to 25% of max load or 50% to 75% to 50% of max load, R/S: 0.1A/uS, periods: 4mS, Output Overshoot is less then ±5%.

输出电压在 11.4-12.6V 之间,负载变化: 从最大载的 25%到 50%再到 25%或从最大载的 50%到 75%再到 50%,斜率: 0.1A/uS,周期: 4mS, 输出过冲应小于±5%.

3.9. Capacitance Load/容性负载

When input 115Vac/230Vac and capacitance load is 1000uF, the adapter can turn on normally and the output is in the rated range.

在输入 115Vac/230Vac, 1000uF 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内

4. Protection Requirements/保护要求

4.1. Over Current Protection/过流保护

Ocp Point Limited: 1.05A~1.5A /保护点限制:最大为 1.05A~1.5A

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: < 16V/过压保护点限制: 小于 16V

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

当输出过压时,电源进入打嗝保护模式,产品不会损伤

5. Environment Requirements/环境要求

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

0°C to +45°C

10%RH to 95%RH

Note: The power adapter can operate normally at 0°C/+45°C.

电源在 0°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 5000 meter /低于 5000 米

5.3. Vibration/振动

9 to 200Hz 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: 9 to 200Hz, 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 面各一次, 跌落在水泥面上, 高度: 100CM。

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 60,000hours at 25°C, 100% Full load and nominal input condition

平均间隔故障时间: 至少 60,000 小时,25°C 环境及额定输入与 100%满载条件下

6.2. The lifetime electrolyte capacitor/电解电容寿命

The lifetime of electrolyte capacitor shall be at least 26280hours at 30°C of full load and 100Vac/240Vac input condition

电解电容寿命 26280 小时,30°C 环境及 100Vac/240Vac/输入与 100%负载条件下

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

EN 55022:2006+A1:2007 Class B
CISPR 22:2005+2006, Class B
AS/NZS CISPR 22: 2009, 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): 15kV air discharge, 8kV 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 ± 2 kV, Common mode ± 4 kV
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 / 10mA / 60second
Or 4242Vdc / 10mA / 60second

8.2. Leakage Current/漏电流

0.25mAmax. at 264Vac / 50Hz/在输入 264Vac/50Hz 的条件下最大 0.25mA

8.3. Insulation Resistance/绝缘阻抗

100M Ω 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 M Ω 。

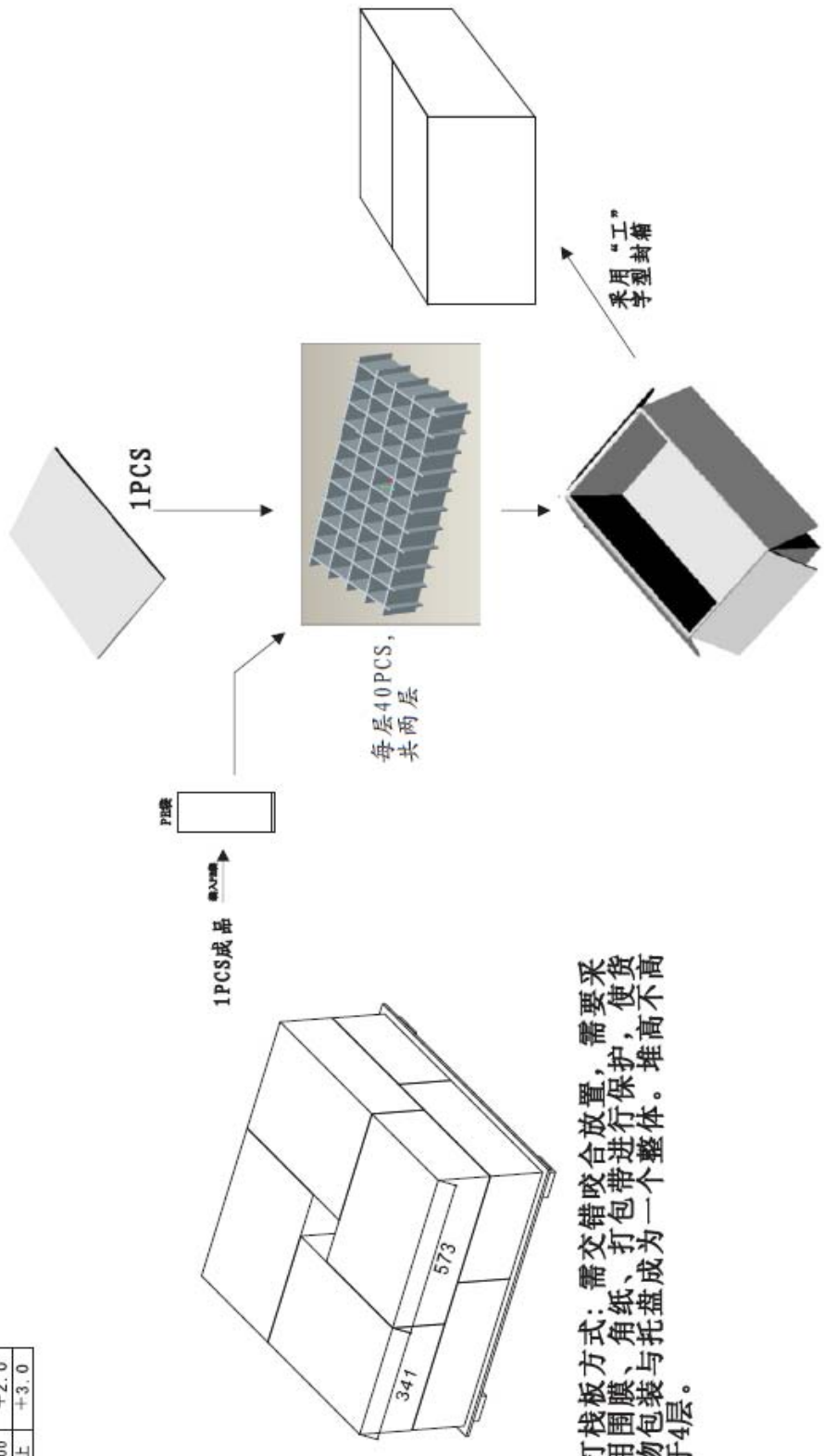
8.4. MEET Regulatory Standards/符合安规标准

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 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

10. Packing Drawing/包装图

尺寸范围 (mm)	公差
0.5-10	+0.5
10-100	+1.0
100-200	+1.5
200-500	+2.0
500以上	+3.0

变更日期	标记	次数	变更描述



打栈板方式：需交错咬合放置，需要采用围膜、角纸、打包带进行保护，使货物包装成为一个整体。堆高不高于4层。

Huntkey 航嘉		MATERIAL NAME	外箱	MATERIAL	A=A瓦楞纸
SHEET 5 OF 5	MATERIAL No.	FILE NAME			HA01212010-1U (供其社用)
UNIT mm	SCALE /	DATE 2016.11.04	REV	01	
DESIGNED 王勇	CHECKED 黄庆叁	CHECKED	APPROVED	夏洪斌	FILE No.