

Specification For 27 Watts/ Switching Mode Power Supply

Product No./产品编号: P23-027096P00R	Model No./产品型号: HKC0279030-2B
Customer/客户:	File No./文件编号:
Revision/版本: 3	Date/日期: 2018-02-02

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:	GW	Checked By : 审 核:	GW	Approved By : 批 准:	MQH
-----------------------	----	----------------------	----	-----------------------	-----

Contents/目录

1. SCOPE/概述.....	4
2. Input Characteristics/输入特性.....	4
3. Output Characteristics/输出特性.....	5
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.....	8
8. Safety Standards/安规标准.....	8
9. 净重/ net weight:	9
10. Mach. Outline Drawing/外观图.....	10
11. Packaging/包装图.....	11
12. Label/镭雕图.....	12

1. SCOPE/概述

1.1. The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provides 27W continuous output power.

资料详细描述了一款 27 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 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/其它

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

1.0Amax. @ 100Vac input & Full load/在 100Vac 输入和满载条件下最大 1.0A

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

80Amax. @ 25°C, 264Vac input/在 25°C 环境, 264Vac 输入条件下最大 80A

2.4. Average Efficiency /平均效率

When 5V output voltage/当 5V 输出电压时:

While input 115Vac and 230Vac, the average efficiency is more than 81.39%. The test point is at 25%, 50%, 75% and 100% of max load respectively (at Type-C end & after working 15 min).

在输入 115Vac 和 230Vac 条件下, 平均效率不小于 81.39%。测试点分别是最大载的 25%, 50%, 75% 和 100% (在 Type-C 端测试 & 热机 15 分钟)。

When 9V output voltage/当 9V 输出电压时:

While input 115Vac and 230Vac, the average efficiency is more than 86.62%. The test point is at 25%, 50%, 75% and 100% of max load respectively (at Type-C end & after working 15 min).

在输入 115Vac 和 230Vac 条件下, 平均效率不小于 86.62%。测试点分别是最大载的 25%, 50%, 75% 和 100% (在 Type-C 端测试 & 热机 15 分钟)。

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

While input 115Vac ~ 230Vac and the output (5V) is no load, the input power loss must be less than 0.1W.

在输入 115Vac~230Vac, 5V 输出空载功耗小于 0.1W.

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>

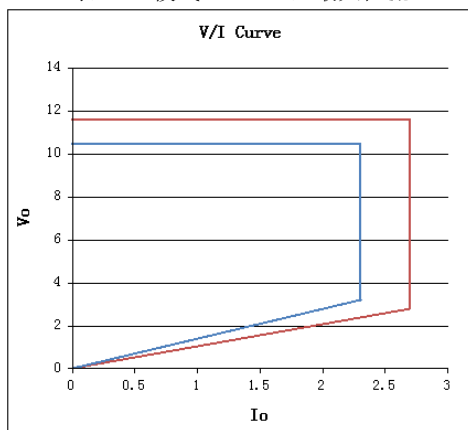
Output Rating	Rated Load/额定负载		Peak Load	Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
	Min. Load	Max. Load				
+5.0V	0A	3A	/	4.65V~5.25V	80mv	
+9V	0A	3A	/	8.55V~9.45V	100mv	
+11V	0A	2.45A	/	10.4V~11.2V	150mv	

Ripple & Noise: Tested by an 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 0.1uF 的陶瓷电容和 10uF 电解电容各一颗.(输入电压 100~240Vac, 在 Type-C 端测试)

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

在 11V 时, CV 模式 3-10.4V, 最大恒流 2.4-2.8A



3.3. Turn - on Delay Time/开机延迟时间

2S max. @ 100Vac input & 5V3A/在 100Vac 输入和 5V3A 输出条件下最大 2S

3.4. Hold-up Time/关机维持时间

7mS 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 7mS

3.5. Rise Time/上升时间

30mS max. @ 5V3A/在 5V3A 条件下最大 30mS

3.6. 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%

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

When 5V output voltage/输出电压为 5V 时:

Output voltage is within 4.5-5.5V while the load step is from 25% to 50% and from 50% to 75% of max load, R/S: 0.25A/uS, frequency: 1KHz and 0.5mS duration at 50% of max

load.

输出电压在 4.5-5.5V 之间, 负载变化: 从最大载的 25%到 50%和 50%到 75%, 斜率: 0.25A/uS, 频率: 1KHz, 50%负载持续时间为 0.5mS.

When 9V output voltage/输出电压为 9V 时:

Output voltage is within 8.1-9.9V while the load step is from 25% to 50% and from 50% to 75% of max load, R/S: 0.25A/uS, frequency: 1KHz and 0.5mS duration at 90% of max

load.

输出电压在 8.1-9.9V 之间, 负载变化: 从最大载的 25%到 75%和 50%到 75%, 斜率: 0.25A/uS, 频率: 1KHz, 50%负载持续时间为 0.5mS。

4. Protection Requirements/保护要求

4.1. Over Current Protection/过流保护

When 5V output, OCP Point Limited: 3.0A~3.4A/保护点限制: 3.0A~3.4A.

When 9V output, OCP Point Limited: 3.0A~3.4A/保护点限制: 3.0A~3.4A

The power supply must shut-down in an over current condition and automatically return to normal operating condition once the fault condition has been removed.

当过电流时, 电源关断, 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 power supply must shut-down in the event of a short circuit and automatically return to normal operating condition once the fault condition has been removed.

当输出发生短路时, 电源关断, 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

When 5V&9V output, OVP point limit: <140%Vo/保护点限制: <140%Vo,

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

当输出过压时, 电源进入将闭锁保护模式产品不会损伤。

5. Environment Requirements/环境要求

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

-10°C to +40°C, 5%RH to 95%RH, Sea level shall below 5,000 meter.

在海拔低于 5000 米的条件下, 能正常工作。

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

-40°C to +70°C, 5%RH to 95%RH (non-condensing) @ Sea level shall below 5,000 meter

在海拔低于 5,000 米的条件下, 低温存储下限为-40°C (无结冰环境); 高温存储上限为+70°C, 相对湿度为 5%RH to 95%RH。

6. Reliability Requirements/可靠性要求

6.1. Common Noise/共模噪声

Common mode noise < 2V (frequency: 20KHz-100KHz, input voltage: 220Vac/50Hz, 110Vac/60Hz)

输入 220Vac/50Hz, 110Vac/60Hz; 频率 20 KHz-100 KHz, 共模噪声低于 2V。

6.2. Noise Requirement/噪声要求

The whole input voltage and load, the noise value should less than 25dB, the distance is 20CM

在全电压和全负载范围内，在标准静音房测试小于 25dB，距离为 20CM。

6.3.MTBF Qualification/平均间隔故障时间估算

The MTBF shall be at least 50,000 hours at 25°C, Full load and normal input condition
平均间隔故障时间: 至少 50,000 小时,25°C环境及额定输入与满载条件下

6.4.Environmental reliability/环境可靠性

6.4.1. Low temperature storage/低温存储

Storage the power supply at -40°C 24 hours, after 2 hours recovery, the power supply can turn on normally and the output voltage is in the rated range.

在低温-40°C环境下存储 24 小时，恢复 2 小时后，电源能正常开机，输出电压范围在额定范围内。

6.4.2. High temperature storage/高温存储

Storage the power supply at 70°C 24 hours, after 2 hours recovery, the power supply can turn on normally and the output voltage is in the rated range.

在高温 70°C环境下存储 24 小时，恢复 2 小时后，电源能正常开机，输出电压范围在额定范围内。

6.4.3.Low temperature operating/低温工作

Ambient temperature: -10°C, input voltage: 90Vac/264Vac & full load, in two input voltage for each work 12hours; No abnormality in electric and mechanical characteristic after 2 hours recovery at the room temperature.

环境温度为-10°C，输入电压为 90Vac 和 264Vac。工作负载为满载。在二种电压应力下分别工作 12 小时。测试结束后在常温下恢复 2 小时，电气性能和机械性能无异常。

6.4.4.High temperature operating/高温工作

Ambient temperature: 40°C, input voltage: 90Vac/264Vac & full load, in two input voltage for each work 12 hours; No abnormality in electric and mechanical characteristic after 2 hours recovery at the room temperature.

将环境温度设定为 40°C，输入电压分别为 90Vac 和 264Vac，工作负载为满载，在二种电应力下分别工作 12 小时；测试结束后在常温下恢复 2 小时，电气性能和机械性能无异常。

6.4.5.High and low temperature cycle work/高低温循环工作

Ambient temperature: -10~40°C, high-low temperature each settle 3 hours, temperature change: 1°C/min, aggregately cycle 2.

环境温度: -10~40°C，高低温各停留 3 小时，温度改变时间 1°C/min，共 2 个循环。

6.4.6. Burn-in/烘烤

Ambient temperature:40°C, input voltage:115Vac/230Vac&full load, work 4-24 hours.

环境温度: 40°C，输入电压: 15Vac/230Vac 下满载工作 4-24 小时。

6.5.Mechanical reliability/机械可靠性

6.5.1. Load test/载重测试

70Kgf @ 2S. /对外壳施加 70Kgf，保持 2S.

6.5.2.Working vibration test/工作振动测试

5 to 500Hz sweep at a shift gears for 20 minute for each of the perpendicular axes X, Y, Z thereinto :acceleration frequency for 10 m2/s3 at 5~10HZ; acceleration frequency for 3 m2/s3 at 10~200HZ; acceleration frequency for 1 m2/s3 at 200~500HZ

扫描频率: 5 to 500Hz 随机振动, X, Y, Z 三垂直坐标轴向各振动 20 分钟,其中: 5~10HZ 频率范围的加速度频率为 10 m2/s3, 10~200HZ 频率范围的加速度频率为 3 m2/s3, 200~500HZ 频率范围的加速度频率为 1m2/s3

6.5.3. Working impact test/工作冲击测试

3 Edges thrice, half sine wave, acceleration 30G, pulse breadth for 11 mS
半正弦波, 加速度为 30G, 脉冲宽度为 11mS, X、Y、Z 三方向, 各三次

6.5.4. Plug endurance test/插拔耐久测试

5000times @ 20-30 times every minute

5000 次@20-30 次/min

6.5.5. Charger room temperature controlled drop test/常温受控跌落测试

6 Surfaces each one, Height: 100cm, on the marble plane

6 面各一次, 跌落高度: 100 厘米, 跌落到大理石地面上。

6.5.6. Inserting and Pulling out force test/插拔力测试

Insertion force: 5N~~20N Pullout force: 8N~~20N (before 1000times)

Pullout force: 6N~~20N (after 1000times)

插入力: 5N~~20N 拔出力: 8N~~20N (1000 次循环前) 拔出力: 6N~~20N (1000 次循环后)

6.5.7. Label/Nameplate durability test/标示/铭牌耐久性测试

Dips in water cotton cloth to wipe 15S, then dip gasoline cotton cloth to wipe 15S.

蘸水棉布擦拭 15S, 然后蘸汽油棉布擦拭 15S。

6.5.8. Salt spray test/盐雾测试

5%NaCl, 35°C, 8 hours, Dry 16 hours.

5%NaCl, 35°C, 8 小时, 晾干 16 小时。

6.5.9. Case extrusion/外壳挤压测试

200N&10mm/min

施加 200N 的挤压力, 测试速度 10mm/min。

6.6. Life time/寿命

The lifetime shall be at least 10950 hours at 40°C, 80% full load and 100Vac/240Vac input condition.

寿命至少 10950 小时, 40°C 工作温度环境, 100Vac/240Vac 输入与 80% 负载条件。

7. EMI/EMS Standards/EMI/EMS 标准

7.1. EMI Standards/EMI 标准

EN 55022

IEC 61000-3-2

IEC 61000-3-3

CISPR 22

AS/NZS CISPR 22

满足最新标准

7.2. EMS Standards/EMS 标准

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
IEC 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 4kV contact discharge
IEC 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
IEC 61000-4-4	Electrical Fast Transient/Burst-EFT, $\pm 2\text{KV}$, 2 min
IEC 61000-4-5	Surge Immunity Test: Differential mode $\pm 1\text{kV}$, Common mode $\pm 2\text{kV}$
IEC61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
IEC 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 Or 4242Vdc / 3.5mA / 60second

初级对次级: 3000Vac / 3.5mA / 60 秒 或 4242Vdc / 3.5mA / 60 秒

8.2. Leakage Current/漏电流

20uA max. at 264Vac / 50Hz input/在输入 264Vac/50Hz 的条件下最大 20uA

8.3. Insulation Resistance/绝缘阻抗

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

在初级与次级间加 500Vdc 进行测试,最小 100M Ω

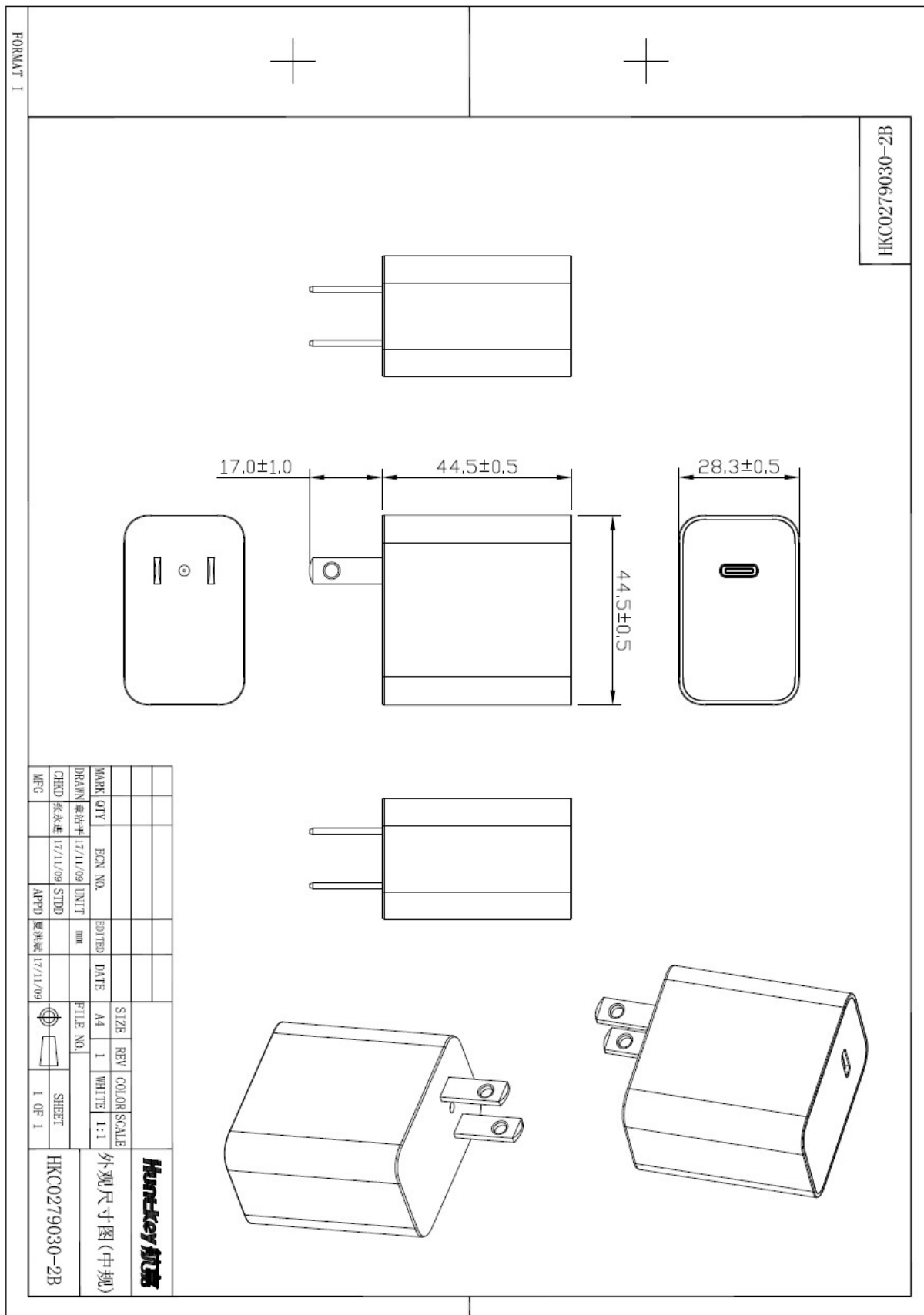
8.4. Regulatory Standards/安规标准

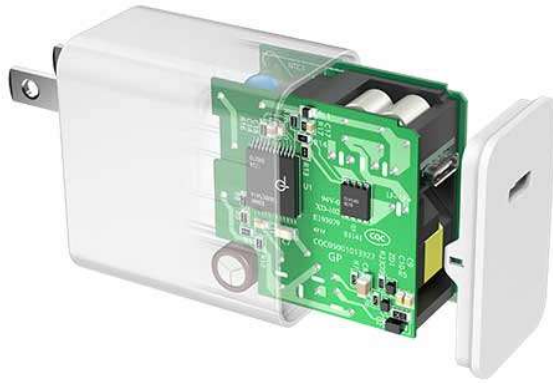
Type	Country	Standard	Type	Country	Standard
<input checked="" type="checkbox"/> UL/CUL	USA	UL60950-1	<input type="checkbox"/> PSB	Singapore	IEC60950-1
<input type="checkbox"/> TUV	Europe	EN60950-1	<input type="checkbox"/> PSE	Japan	J60950
<input type="checkbox"/> CCC	China	GB4943	<input type="checkbox"/> NOM	Mexico	NOM-001
<input type="checkbox"/> CE	Europe	EN60950-1	<input type="checkbox"/> GOST	Russia	MEK60950
<input type="checkbox"/> BSMI	Taiwan .China	CNS 14336			

9. 净重/ net weight:

9.1. 净重为 180g/1PCS

10. Mach. Outline Drawing(Reference)/外观图





27W USB-C

- Input: 100-240V, 50/60Hz, 1.0A
- Output: 27W, 5V/3A, 9V/3A, 11V/2.45A
- Superfast Charging: QC4.0+ & PD3.0 Technologies
- Easy Connecting: USB Type-C Port & Cable
- Multiple Protections: OVP, OCP, OTP, SCP
- Low Standby Power: <0.1W
- Cable Length: 100cm
- Complies With: DoE VI
- Accredited with CCC, UL, CE, FCC, VI, CB

[BUY ON AMAZON](#)

Category: [Wall Chargers](#)

• Description

Description

Huntkey USB-C Type C Charger, 27W 9V/3A, PD3.0 QC4.0 Fast Wall Charger for MacBook Air/12, iPad Pro 11"/12.9"



New, Samsung s10/s9/s8/s7/C9/note9/note8 ect, with 3.3ft C-C Cable

Upgraded Quick Charger

Auto-detect device, save your time

 Samsung S9 QC4.0 2h 1A Charge 3.5h	 iPad pro QC4.0 3h 1A Charge 4.5h	 Macbook Air QC4.0 3.5h 1A Charge 5h
--	--	---



12.9" iPad Pro New, 11" iPad Pro
and All USB-C Port Devices Can be Applied



Huntkey USB-C Wall Charger

Intelligent Technology: charging Fast for
QC4.0+: BC1.2, QC2.0/3.0/4.0/4+, PD2.0/3.0

Built-in double chips with quick charge
identification and power controlling, intelligently
control charging rates and matches a proper
rate for smartphones or tablets, keep the
battery durable all the time.

Compatible Devices: iPad pro, Macbook Air,
Macbook, Samsung s10+/s10, s9/s9+, s8/s8+,
note9, note8, N8, C7pro/C9/C9pro



Standard USB2.0 Transmission Speed Supports data
transfer between notebooks and mobile phones with
Type-C interface.

Multi-protection: Over-charge Protection, Over-Current
Protection, Over-Voltage Protection, Over-Heat
Protection, Short-circuit Protection

Average efficiency with output 5V: 81.39% min.

Safety Certificate: CCC, UL, CE, FCC, VI, CB

Average efficiency with output 9V: 86.62% min.

Packing list: QC 4.0 charger power adapter; USB C-C cable

Standby power loss is less than 0.1W

MTBF: 50000 h



A small and powerful adapter, putting it in your pocket, you can barely feel it. The high-gloss rounded casing, compact and clean design, We have been pursuing simple and beautiful designs. **Item Dimensions:** 1.7in*1.7in*1.1in. **Package Dimensions:** 3.1in*3.3in*1.1in. **Weight:** 5.3oz.



The shell is scratch-resistant, wear-resistant and dirt-resistant. When using it for a year, it is still as good as new. **High-quality** PC+ABS material shell with fire retardant, heat resistant, drop protection.



The charger can input 100V to 240V. It can automatically match the voltage. If you go to other cities, don't need to worry about voltage mismatch. **Input Voltage** : 100Vac to 240Vac, 1.0A, 50-60Hz. Output: 5V/3A or 9V/3A or 11V/2.45A.