



# SPECIFICATION FOR APPROVAL

## 产品规格承认书

客户名  
CUSTOMER: Quick Charge

产品名称  
CUSTOMER: QC3.0 充电器

型号规格  
CUSTOMER: ABT030050

文件编号  
CUSTOMER: A-190166

文件版本  
CUSTOMER: A.8

文件页数  
CUSTOMER: 12

编制 PREPARED	审核 CHECKED	批准 APPROVED

### 客户确认

部门 DEPARTMENT	签名 SIGNATURE	日期 DATE
品质部 QUALITY		
工程部 ENGINEERING		
核准 APPROVED		

## E.C.LIST / 变更记录

Rev. 版本	Description of Change/变更内容描述		Changed Date 日期	Remark 备注
	Before/变更前	After/变更后		
A				
B				
C				
D				
E				

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# 1. SCOPE / 概述

## 1.1. Description/描述

<input checked="" type="checkbox"/>	SMPS Adaptor(Wall mount)/插墙式适配器	<input type="checkbox"/>	SMPS Adaptor(Desk-top)/桌面型适配器
<input type="checkbox"/>	Open Frame/开放式结构	<input checked="" type="checkbox"/>	Quick Charge/快充

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provides 18W Quick Charge continuous output power. The power supply shall meet the RoHS requirements.

资料详细描述了一款 18W 快充 (连续输出功率)开关电源的电气性,结构性及环境等要求. 此款电源符合 RoHS 要求.

# 2. Input Characteristics / 输入特性

## 2.1. Input Voltage & Frequency / 输入电压与频率

	Minimum/最小	Rating/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	110Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

## 2.2. Inrush Current (cold start) / 浪涌电流(冷启动 @ 230V AC)

No damage for 220V/50Hz at cold start (25°C).

在冷开机条件下,最大浪涌电流对机型不损坏

## 2.3. Average Efficiency / 平均效率

While input 115Vac and 230Vac,the average efficiency is more than 86% .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 86% 。测试点分别是最大载的 25%,50%,75%和 100%。

## 2.4. Standby power / 空载功耗

Standby power <0.1W @ 230VAC/50Hz.

在输入 230Vac , 空载功耗小于 0.1W .

## 2.5. Cooling / 冷却方式

Natural convection.

自然对流

## 2.6. Mean Time Between Failure ( MTBF ) / 平均故障间隔时间

The MTBF for the power adapter shall equal or exceed 50,000 hours when operated at full rated load in an ambient temperature of 25 degree C. (rated input voltage , and using the BELLCORE SR-332 method )

在 25°C 的环境温度下 ( 额定输入电压 , 依据 BELLCORE SR-332 标准 ) 在满额定负载下运行时 , 电源适配器的 MTBF 等于或超过 50,000 小时。

## 3. Output Characteristics / 输出特性

RATED OUTPUT / 额定输出	Rated Load/额定负载		Remark 备注
	Min.	Max.	
Output Voltage(unload) / 空载输出电压	5.0V /9.0V/12.0V(±0.25V)		
Output Voltage(Full load) / 负载输出电压	5.0V /9.0V/12.0V(±0.25V)		
Output Current / 输出电流规格	5.0V3A/ 9.0V2A/ 12.0V1.5A		
Turn - on Delay Time/开机延迟时间	/	3S	
Hold-up Time/关机维持时间	5mS	/	
Ripple & Nosit / 纹波与噪声	/	180mVp-p	
OCP / 过电流保护			
power Wp-p / 峰值功率			

Ripple & Noise: Tested by a oscilloscope using 20MHz bandwidth and the output is paralleled a 0.1uF ceramic capacitor and a 47uF electrolysis 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 0.1uF 的陶瓷电容和一颗 47uF 的电解电容

The line length is 1000 mm; 22 AWG wire diameter for testing line, and will be testing the power adapter and electronic load tester connection is good, and then electricity. Under the condition of rated input voltage, the CC model light load and full load test of power adapter output voltage should be accord with the requirement of specifications; CV model for 4.70 V when working current, should comply with the specification requirements of this specification.

采用线长为 1000mm ; 线径为 22AWG 的测试线 , 并将被检测的电源适配器及电子负载仪连接好 , 然后通电.在额定输入交流电压条件下 , CC 模式空载和满载测试电源适配器的输出电压应符合规格书的要求;CV 模式为 4.70V 时的工作电流,应符合本规格书的规范要求。

## 4. Protection Requirements / 保护要求

### 4.1. Over Current Protection / 过流保护

OCP Point Limited: 110%-200% auto restart

保护点限制: 110%-200%自动保护

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

## 5. Environment Requirements / 环境要求

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

0°C to +40°C 20%RH to 80%RH @ Sea level shall below or no more than 10,000 feet

在海拔小于或等于 10,000 英尺的条件下，低温工作下限为 0°C，高温工作上限为 +40°C，相对湿度为 20%RH to 80%RH。

### 5.2. The maximum Room Ambient Temperature / 最高室内环境温度定义

The maximum room ambient temperature (T<sub>mra</sub>), as mentioned in clause 1.4.12 of IEC 60950-1. And the IEC/60950 IEC/60335 IEC/61558 are defined as 40 °C

最高室内环境温度 ( T<sub>mra</sub> ), 依据如 IEC 60950-1 第 1.4.12 节所述。以及 IEC/60950 IEC/60335 IEC/61558 均定义为 40°C。

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

-30°C to +70°C 10%RH to 90%RH ( non-condensing ) @ Sea level shall below 30,000 feet

在海拔低于 30,000 英尺的条件下，低温存储下限为 -30°C ( 无结冰环境 ) ；高温存储上限为 +70°C，相对湿度为 10%RH to 90%RH。

### 5.4. Vibration / 振动

10 to 300Hz sweep at a constant acceleration of 1.0G ( Breadth: 3.5mm ) for 1 Hour 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

### 5.5. Transportation / 运输

The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810F, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

此电源适配器根据 MIL-STD-810F 标准、并依照第 514 和 X 条规范包装好并固定在托板上，能承受正常的运输过程中的震动和冲击。

## 6. EMC Standards & Safety Standards / EMC 标准与安规标准

### 6.1. Electrostatic Discharge Immunity / 静电放电

EN 61000-4-2/依据 EN 61000-4-2 标准

- Air Discharge:  $\pm 8\text{kV}$
- 空气放电:  $\pm 8\text{kV}$
- Contact Discharge:  $\pm 4\text{kV}$
- 接触放电
- Performance Criteria B
- B 级测试标准

Electrostatic-discharge test by contact or air should be conducted with Static-discharge tester, energy storage capacitance of  $150\text{pF}$ , and discharge resistance of  $330\Omega$ ,  $8\text{KV}$  air discharge,  $4\text{KV}$  contact discharge.

静电放电测试应由合同或空气进行静电放电测试仪, 储能电容  $150\text{ pf}$  和放电电阻  $330\Omega$ ,  $8$  千伏空气放电,  $4\text{ kv}$  接触放电。

### 6.2. Radiated Field Immunity / 射频电磁波抗干扰

- EN 61000-4-3/依据 EN 61000-4-3 标准
- Frequency Range:  $80\text{-}1000\text{MHz}$
- 频率范围:  $80\text{-}1000\text{MHz}$
- Field Strength:  $3\text{ V/m}$  with  $80\%$  amplitude modulation of  $1\text{ kHz}$
- 场强:  $3\text{ V/m}$   $80\%$   $1\text{ kHz}$
- Performance Criteria A
- A 级测试标准

Radio-frequency electromagnetic field susceptibility test, RS  $80\text{-}1000\text{MHz}$ ,  $3\text{V/m}$ ,  $80\%\text{AM}(1\text{KHz})$ .

射频电磁场磁化率测试, RS  $80\text{-}1000\text{MHz}$ ,  $3\text{V} / \text{m}$ ,  $80\%\text{AM} ( 1\text{KHz} )$  .



### 6.3. Fast Transient Immunity / 电压快速瞬变脉冲群抗干扰

EN 61000-4-4/依据 EN 61000-4-4 标准

- AC-input: 1kV
- Performance Criteria A
- A 级测试标准
- AC-input: 0.5kV
- Performance Criteria B
- B 级测试标准

### 6.4. Surge Immunity / 雷击抗干扰测试

EN 61000-4-5/依据 EN 61000-4-5 标准

- 1.2/50 usec Open Circuit voltage/开路电压
- 8/20 usec Short Circuit current/短路电流
- Power line: 1kV/输入电压
- Line to Earth: 2kV/对地

Lightning Surge Voltage shall be applied in differential and common mode to AC input lines and cross primary ac input and secondary GND.

雷击浪涌电压应以差分 and 共模方式应用于交流输入线和交叉初级交流输入和次级 GND

### 6.5. EMC Standards/EMC 标准

EN 61000-3-2	EN 61000-3-3	EN 55014-2	EN55014-1

## 6.6. Safety Standards / 安规标准

Type	Country	Standard	Type	Country	Standard
CB	CB	IEC62368-1	UL	US	UL 1310:2018
FCC	US	Subpart B:2017	FCC	US	ANSI C63.4:2014
UL	US	UL 62368-1			

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

Primary to Secondary: 3000Vac / 10mA / 60 seconds (3 seconds for production)

初级对次级: 3000Vac / 10mA / 60 秒(生产时高压测试时间: 3 秒)

## 6.8. Leakage Current / 漏电流

0.25mA max. at 240Vac / 50Hz input/在输入 240Vac/50Hz 的条件下最大 0.25mA

## 6.9. Insulation Resistance / 绝缘阻抗

100M $\Omega$  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 $\Omega$

## 7. Reliability Requirements / 可靠性要求

### 7.1. Burn-in / 老化

The power supply shall be burn-in for 4 Hours under normal input and 80% rated load at 40°C

产品在 40°C 的环境及 80% 额定负载条件下煲机 4 小时

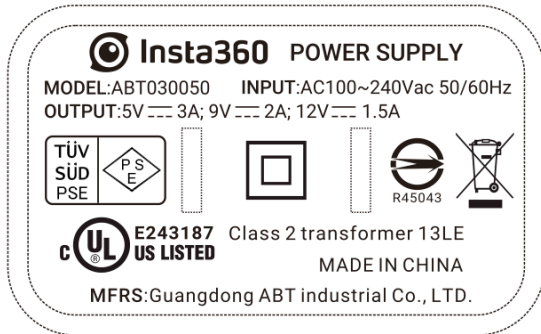
## 8. Testing Equipment / 测试设备

NO.	Testing Equipment / 测试设备	Model/型号	Remark/备注
1	AC Source / 交流输入电源	华仪 6205-300W	
2	Power Meter / 电源功率计	Protronix-1201	
3	Electronic Load / 电子负载	Chroma-63030C	
4	Oscilloscopes / 示波器	泰克 3012	
5	Digital Multimeter / 数字万用表	VC9807A	
6	DC Power / 直流输入电源	KXN-3030D	
7	HI-POT Tester / 耐压测试仪	华仪 7410	
8	Hybrid Recorder / 混合记录仪	YOKOGAWA DR130	
9	Cons. T/H Simulator / 恒温恒湿仪	TH-A4H 1-150	
10	Insulation Resistance Tester / 绝缘电阻表	华仪 7410	

## 9. Product Drawing / 产品图



外形效果图(仅为 **外壳效果展示** ,线材具体见下表明细)



铭板内容

铭板效果图

线材以及 DC 头参数

输入插脚	美规	输出线材	/
AC Plug	US	Output wire	/
DC 头规格	/	线长	/
DC Jack Plug	/	Line length	/

# 10. Outline Drawing / 外形图

