



Specification for Approval

CUSTOMER

PROJECT

DESCRIPTION 5V1A Power Bank

GIVEN PART NUMBER

MFR'S PART NUMBER MPB-5000

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| DRAWED/制定 | CHECKED/审核 | APPROVED/核准 | DESIGN NO 设计编号 | |
|-----------|------------|-------------|-------------------|------|
| | | | MODEL NO/型号 | 5V1A |
| | | | REV/版本 | |
| | | | DATE/日期 | |
| | | | PAGE/页码 | |

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一、综述 Summary

本规格书定义为5W 输出移动电源。

This specification is defined as 5W output charging treasure.

二、应用范围 Applications

本产品适用于各类手机、MID、PSP、MP4、数码相机、蓝牙耳机、便携式DVD、CD 播放机等多种数码产品。

This product is suitable for all types of mobile phones、MID、PSP、MP4、digital cameras、Bluetooth headsets、Portable DVD、CD players and other digital products.

三、产品特点 Product Features

- 快速充电, 5V1A输出, 最大输出电流可达1.2A
- Fast charging, 5V1A output, the maximum output current up to 1.2A
- 电池容量: 5000mAh。
- Battery capacity: 5000mAh.
- 具有过充、过放、短路、过流的软硬件双重保护, 低电量报警。
- hardware and software dual protection of over-charge, over discharge, short circuit, over current, low battery alarm.

- 恒压恒流充电，恒压恒流放电，高效率输出。
- constant voltage constant current charging, constant voltage constant current discharge, high efficiency output.
- 负载自动识别（即插即充），空载自动识别进入关机模式。
- Load automatic identification (plug and charge), no-load automatic identification into shutdown mode.
- 单键开关机、电量查询、长按3S 开机。
- One-touch switch, power queries, long press 3S boot.
- 锂聚合物电池具有能量密度高、更小型化、超薄化、轻量化，以及高安全性和低成本等多种明显优势，是一种新型电池。
- Lithium-polymer batteries have high energy density, more compact, ultra-thin, lightweight, and a variety of significant advantages such as high security and low cost, is a new battery.

四、电池保护板相关电气特性

Battery protection board related electrical characteristics

| 测试项目 Test Project | 详细内容Details | 最小值Min | 典型值Typical values | 最大值Max | 单位Unit | 备注 | |
|---|---------------------|--|-------------------|--------|--------|----|--|
| 电池保护参数配置 Battery protection parameters | 过充 (overcharge) | 单节过充保护 (Single overcharge protection) | 4.250 | 4.280 | 4.300 | V | |
| | | 单节过充保护延迟时间 (Single overcharge protection delay time) | 0.15 | 1.2 | 4.26 | S | |
| | | 单节过充保护恢复 (Single overcharge protection and restoration) | 4.050 | 4.075 | 4.100 | V | |
| | 过放 (over-discharge) | 单节过放保护电压 (Single over-discharge protection voltage) | 2.450 | 2.50 | 2.550 | V | |
| | | 单节过放保护延迟时间 (Single over-discharge protection delay time) | 36 | 144 | 290 | ms | |
| | | 单节过放保护恢复电压 (Single over-discharge recovery voltage protection) | 2.850 | 2.900 | 2.950 | V | |
| | | 过流保护检测电压 (Overcurrent detection voltage) | 0.12 | 0.15 | 0.18 | V | |
| | | 过流保护延迟时间 (Overcurrent delay time) | 80 | 200 | 300 | Ms | |
| | | 过流保护恢复检测电阻 (Recovery overcurrent detection resistor) | 50 | 100 | 150 | KΩ | |

五、电路板相关特性 PCB-related characteristics

| 测试项目 Test Project | 详细内容Details | 最小值Min | 典型值 Typical values | 最大值Max | 单位 Unit | 备注 | |
|------------------------------|----------------------------------|---|---|--------|------------|----|---|
| 工作参数 Operating parameters | 过流 Overcurrent | USB discharge overcurrent (USB放电过流保护) | 1.1 | 1.2 | 1.5 | A | |
| | | Discharge overcurrent delay time (放电过流保护延迟时间) | 4.5 | 9 | 18 | ms | |
| | | Overcurrent recovery mode (过流保护恢复方式) | 去掉负载后, 重新充电3S即可恢复After removing the load, can be restored to recharge 3S | | | | |
| | 短路 short circuit | Short circuit protection (短路保护) | 有Yes | | | | |
| | | Short-circuit protection delay time (短路保护延迟时间) | — | 320 | 600 | us | |
| | | Short-circuit protection and restoration methods (短路保护恢复方式) | 去掉负载后, 重新充电 3S 即可恢复 After removing the load, can be restored to recharge 3S | | | | |
| | 充电特性 Charging characteristics | Charging input voltage (充电输入电压) | 4.50V | 5.0 | 5.5 | V | |
| | | Precharge current (预充电电流) | 350 | 400 | 450 | mA | 转换点设为 2.90V Conversion point set 2.90V |
| | | The charge current (恒流充电电流) | 650 | 1.00 | 1.1 | mA | 可以持续10 小时以上Can last more than 10 hours |
| | | Charging cut-off current (充电截止电流) | 50 | 700 | 750 | mA | |
| | 放 | USB1 continuous | — | 1.00 | 1.1 | A | 可以持续4小时 |

| | | | | | | |
|---|--|------|------|------|----|---|
| 电 特 性 Dis c h a r g e C h a r a c t e r i s t i c s | discharge current (USB1 持续放 电 流) | | | | | 以上Can last more than four hours |
| | USB1 pulse discharge currents (USB1 脉冲放 电 流) | — | — | 1.2 | A | |
| | USB1 off current (USB1 截止电 流) | — | 20 | 30 | mA | |
| | USB2 off current (USB2 截止电 流) | — | — | — | | |
| | USB1 load voltage (USB1 空载电 压) | 5.25 | 5.3 | 5.35 | V | |
| | USB2-load voltage (USB2 空载电 压) | — | — | — | | |
| | USB1 load voltage (USB1 带载电 压) | 5.0 | 5.2 | 5.30 | V | 电池电压低时 为5.0V±0.2V When the battery is low , voltage is 5.0V ± 0.2V |
| | USB2 load voltage (USB2 带载电 压) | — | — | — | | |
| | USB1 dynamic load (USB1 动态负 载) | 5.0 | 5.20 | 5.30 | V | 0到1000mA |
| | USB2 dynamic load (USB2 动态负 载) | | | | | |
| | USB1 output ripple (USB1 输出纹 波) | 40 | 56 | 80 | mV | 电池电压3.3V, 输出1A Battery voltage 3.3V, Output 1A |
| | USB2 output ripple (USB2 输出纹 波) | | | | | |
| | Single 1A load temperature(单路带 载1A 温度) | 40 | 45 | 48 | ℃ | 电池3.5V Battery 3.5V |
| | Dual temperature load of 3A (双路带 载共3A 温度) | — | — | — | | |
| | USB1 1A output efficiency (USB1 输 出1A 效率) | 85 | 87 | 90 | % | 3.7V电池电压 3.7V battery voltage |
| | USB2 output 2A efficiency (USB2 输 出2A 效率) | — | — | — | | |
| | Low battery voltage | 3.0 | 3.2 | 3.3 | V | |

| | | | | | | |
|--|---|------|-----|-----|----|----------------------------------|
| | alarm (电池低电报警电压) | | | | | |
| | Low battery voltage shutdown (电池低电关机电压) | 2.85 | 2.9 | 3.0 | V | |
| | Static power consumption (静态功耗) | 90 | 100 | 110 | uA | 3.7V电池电压 3.7V battery voltage |

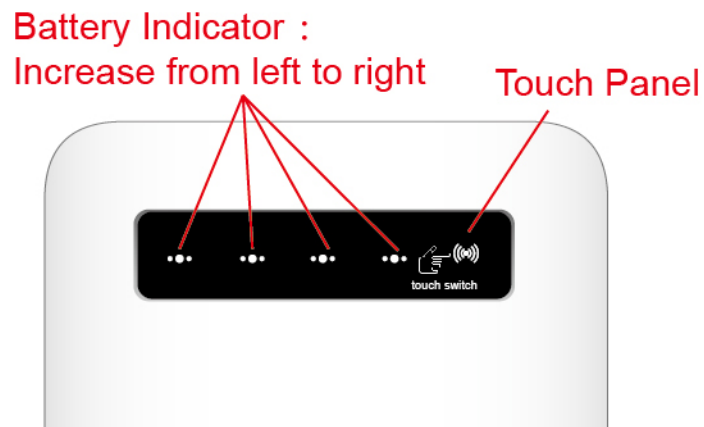
六、电量指示 Battery indicator

| 测试项目Test Project | 详细内容Details | 最小值Min | 典型值Typical values | 最大值Max | 单位Unit | 备注 |
|--------------------------------------|-----------------------------------|--------|-------------------|--------|--------|--|
| Charged battery indicator(充电电量指示) | Less than 5% (小于5%) | - | 3.3 | 3.44 | V | 1 light flash(1灯闪) |
| | 5% to 25% capacity (5%~25%电量) | 3.45 | 3.5 | 3.58 | V | 1 long bright lights, 2 lights flash (1灯长亮, 2灯闪) |
| | 25% to 50% capacity (25%~50%电量) | 3.6 | 3.68 | 3.70 | V | 2 long bright lights, 3 lights flash (2灯长亮, 3灯闪) |
| | 50% to 75% capacity (50%~75%电量) | 3.75 | 3.8 | 3.93 | V | 3 long bright lights, 4 lights flash (3灯长亮, 4灯闪) |
| | 75% to 100% capacity (75%~100%电量) | 3.95 | 4.0 | 4.13 | V | 4 long bright lights (4灯长亮) |
| Discharged battery indicator(放电电量指示) | Less than 5% (小于5%) | 3.05 | 3.20 | 3.28 | V | 1 light flash(1灯闪) |
| | 5% to 25% capacity (5%~25%电量) | 3.28 | 3.30 | 3.35 | V | 1 long bright lights, 2 lights flash (1灯长亮, 2灯闪) |

| | | | | | | |
|-----------------------|--------------------------------------|------|------|------|---|---|
| | | | | | | 闪) |
| | 25% to 50% capacity (25%~50%电量) | 3.35 | 3.50 | 3.61 | V | 2 long bright lights, 3 lights flash (2灯长亮, 3灯闪) |
| | 50% to 75% capacity (50%~75%电量) | 3.61 | 3.65 | 3.75 | V | 3 long bright lights, 4 lights flash (3灯长亮, 4灯闪) |
| | 75% to 100% capacity (75%~100%电量) | 3.75 | 3.8 | 3.90 | V | 4 long bright lights (4灯长亮) |
| | | | | | | |
| Battery Status (电量查询) | No energy (无电量) | 2.89 | 2.90 | 3.05 | V | 1 light flashing 4HZ (1灯4HZ闪烁) |
| | Less than 5% (小于5%) | 3.05 | 3.20 | 3.28 | V | 1 light flashing 2HZ (1灯2HZ闪烁) |
| | 5% to 25% capacity (5%~25%电量) | 3.28 | 3.30 | 3.35 | V | 1 long bright lights (1灯长亮) |
| | 25% to 50% capacity (25%~50%电量) | 3.35 | 3.50 | 3.61 | V | 2 long bright lights (2灯长亮) |
| | 50% to 75% capacity (50%~75%电量) | 3.61 | 3.65 | 3.70 | V | 3 long bright lights (3灯长亮) |
| | 75% to 100% capacity (75%~100%电量) | 3.70 | 3.8 | 3.89 | V | 4 long bright lights (4灯长亮) |
| | | | | | | |

指示灯分布:

Indicator Distribution



通道分布:

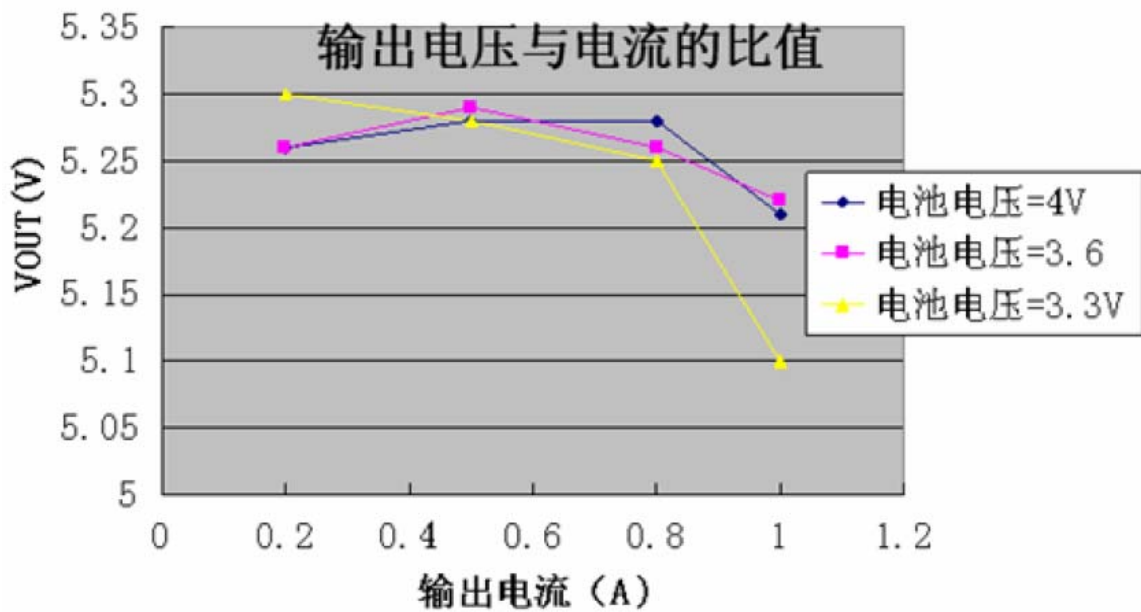
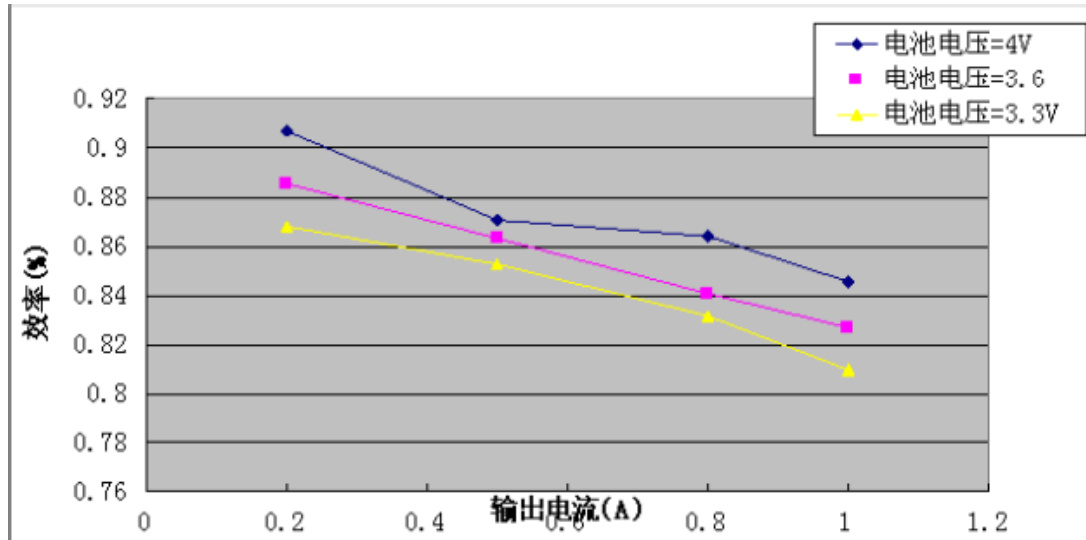
Channel distribution



七、相关对应曲线图

Related corresponding graph

USB1 输出电流效率表
USB1 output current efficiency table



USB1输出电流与输出电压表
USB1 output current and output voltage meter

八、按键功能 Key Functions

1、短按一下按键，电量查询

Short press the button, power inquiry

2、长按按键3秒开机，可给设备充电，无负载10秒，自动关机

Press and hold the button for 3 seconds to boot, you can charge the device, no load 10 seconds, automatic shutdown

九、包装、运输指引 Packaging, transportation guidelines

9.1 包装 Packaging



尺寸: 118*67*9mm

9.2 运输 Transport

运输过程中，应注意防潮、防湿，避免挤压、碰撞等，以免电路板变形。

During transport, should pay attention to moisture, avoid squeezing, collision, etc., in order to avoid deformation of the circuit board.

9.3 注意事项 Precautions

禁止将电池浸入水中或海水中，不能受潮。

Prohibit the battery immersed in water or sea water, not damp.

禁止在热源旁，如火、加热器等，使用或放置电池。

Prohibit use or leave the battery next heat, fire, heater, etc.

禁止将电池加热或丢入火中。

Prohibit put the battery to heat or fire.

