# 1. Attribute

Module name: Lithium battery charging board

Charging method: linear charging

Charging current: 1A (adjustable)

Charging accuracy: 1.5%

Input voltage: 4.5V-5.5V

Full charge voltage: 4.2V

Charging instructions: red light on for charging, red and green light always on for fully-charged and (red light on for charging, blue light on for fully-charged), ship randomly

Input interface: Micro interface, micro USB

Working temperature: -10℃ to +85℃

Connection: reverse connection is not allowed

Weight: 1.8g

Peripheral size: 25*19*10MM

## 2. Features

★ Use Mature charging chip TP4056, simple peripheral circuit, high protective performance and high accuracy for charging.

★ This module is fully machined and automated, and is made of fully SMD parts. Each module will be tested before shipment, with high reliability.

★ The current can be adjusted itself by changing fixed resistor in the circuit board.

## 3. Adjust Current

| RPROG (k) | $I_{BAT}$ (mA) |
|-----------|----------------|
| 30        | 50             |
| 20        | 70             |
| 10        | 130            |
| 5         | 250            |
| 4         | 300            |
| 3         | 400            |

| | |
|---|---|
| **2** | **580** |
| **1.66** | **690** |
| **1.5** | **780** |
| **1.33** | **900** |
| **1.2** | **1000** |

## 4. Application

This module is used to charge single-cell lithium battery or multi-cell parallel connected batteries, supplying power in USB port.

## 5. Precautions

★ The Ammeter testing current is only connected in series to 5V input end of charging board.

★

The charging current is preferably 0.37C of the battery capacity, which is 0.37 times the capacity. For example, The

charging current 400 mAH is enough for a 1000mAH battery. If the charging speed is too excessive and fast, the battery voltage will reduce more after charging!

★The connection cable can't be too slim and long, which will cause high resistance. The voltage will reduce greatly if the cable is too slim.

★ The goof connection to battery is required, otherwise, the voltage will decrease much after fully charging.

★It is normal that the charging current will be less than 1000mA, if the output voltage is higher than 5V, like 5.2V or 5.5V.

The charging current will reduce automatically if voltage is high, not damaging the chip. It is normal that the chip heats up in the 60° working environment, because of large charging current.

★ **Note: Inverse input doesn't influence the chip, however, inverse output (ends of batteries) will burn out chip.**