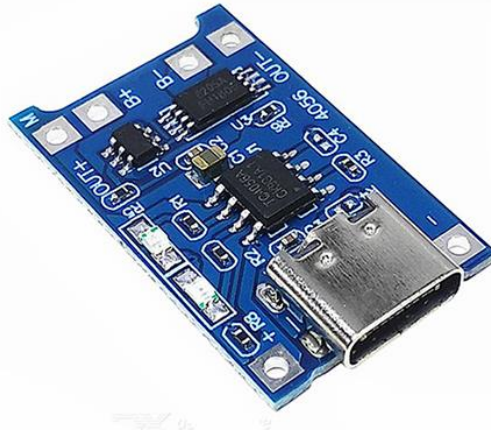


Lithium Battery Charging & Protection Module

Model: TP4056



Description:

This module is used for charging rechargeable lithium batteries using the constant-current/constant-voltage (CC/CV) charging method. In addition to safely charging a lithium battery, the module also provides necessary protection required by lithium batteries.

Features:

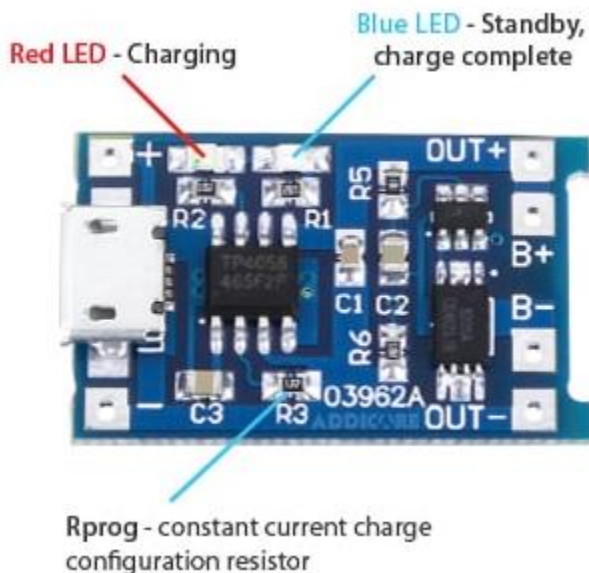
- This module uses both the TP4056 / TC4056 and the DW01A Li-Ion battery protection IC, which together in combination provide the following protection features:
 - Manage the constant current to constant voltage charging of a connected lithium battery
 - Over-discharge protection - keeps your battery from being discharged below 2.4V, a healthy minimum voltage level for your battery
 - Overcharge protection - the module will safely charge your battery to 4.2V
 - Overcurrent and short-circuit protection - the module will cut the output from the battery if the discharge rate exceeds 3A or if a short-circuit condition occurs.
 - Soft-start protection limits inrush current.
 - Trickle charge (battery reconditioning) - if the voltage level of the connected battery is less than 2.9V, the module will use a trickle charge current of 130mA until the battery voltage reaches 2.9V, at which point the charge current will be linearly increased to the configured charge current.
- Can be powered, for charging, from a Type-C USB cable or the + and - connections. The power source needs to be able to provide at least 1A for the charger to correctly charge a connected battery. Most modern phone/USB chargers can provide 1A or more.
- Includes two indicator LEDs. Red LED indicates charging. Blue LED indicates charge complete.
- You can connect two lithium battery cells in parallel to form an equivalent single cell battery with a total capacity of twice that of the individual single cells, but we do not recommend connecting more than two cells at a time to this module.

Specifications:

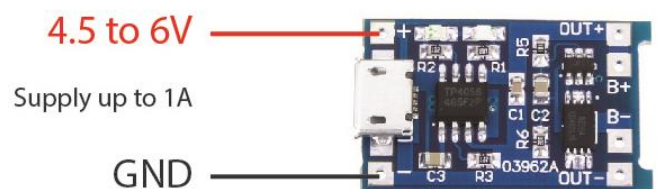
| | |
|--|---|
| Charge Controller | TP4056/TC4056A |
| Protection IC | DW01A |
| Charge/Discharge Control MOSFET | FS8205A |
| Charge Method | Constant-Current/Constant Voltage (CC/CA) |
| Input Supply Voltage | 5V |
| Constant Charge Current | 1000mA |
| Charge Complete (Float) Voltage | 4.2V \pm 1% |
| Overcharge Protection | |
| Overcharge Detection Voltage | 4.3V \pm 50mV |
| Overcharge Release Voltage | 4.1V \pm 50mV |
| Over-Discharge Protection | |
| Over-Discharge Detection Voltage | 2.4V \pm 100mV |
| Over-Discharge Release Voltage | 3.0V \pm 100Mv |
| Overcurrent Protection | |
| Overcurrent Protection Threshold | 3A |
| Overcurrent Cutout Delay | 10~20ms |
| Short-Circuit Cutout Delay | 5~50 μ s |
| Trickle Charge (Battery Reconditioning) | |
| Trickle Charge Threshold Voltage | 2.9V \pm 0.1V |
| Trickle Charge Current | 130mA \pm 10mA |
| Dimensions | |
| Length | 26mm |
| Width | 17mm |
| Weight | 1.6g |

More Product Details:

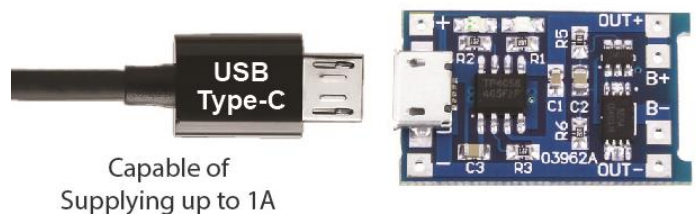
Indicator LEDs and Config Resistor



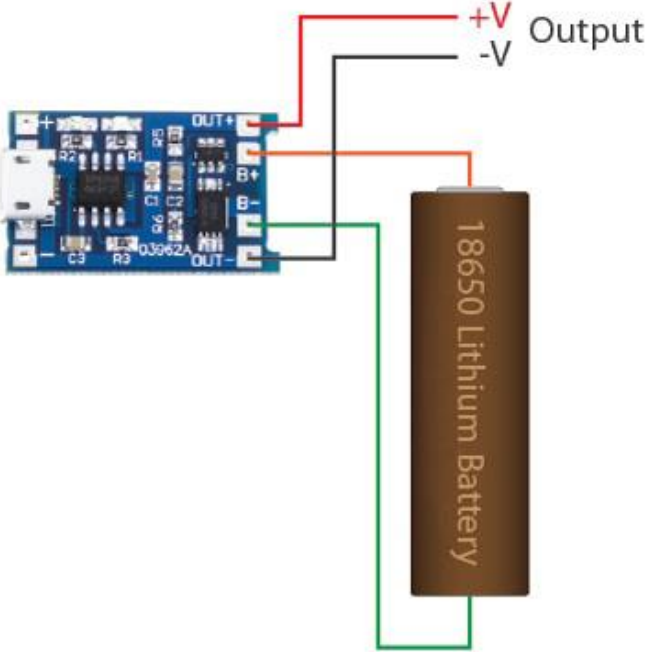
Power Supply Options



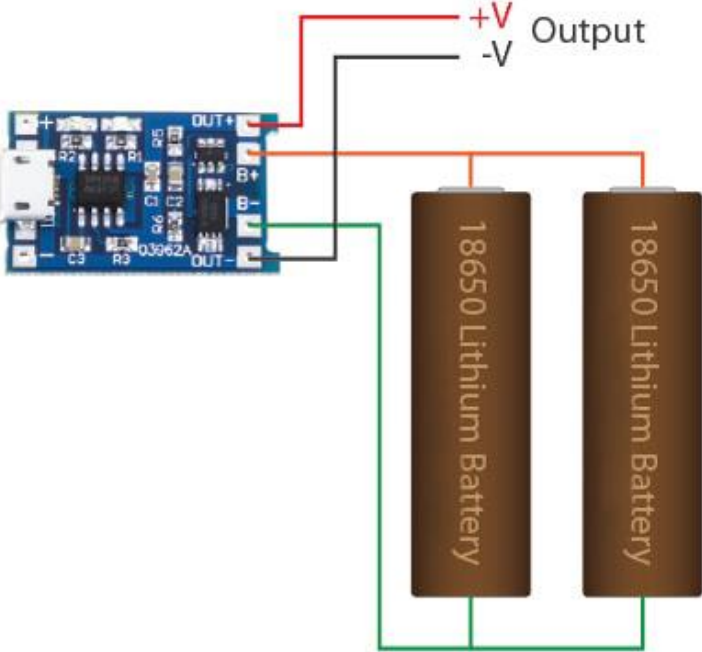
or



Single Cell Connection



Two Cells Parallel Connection



Made in China