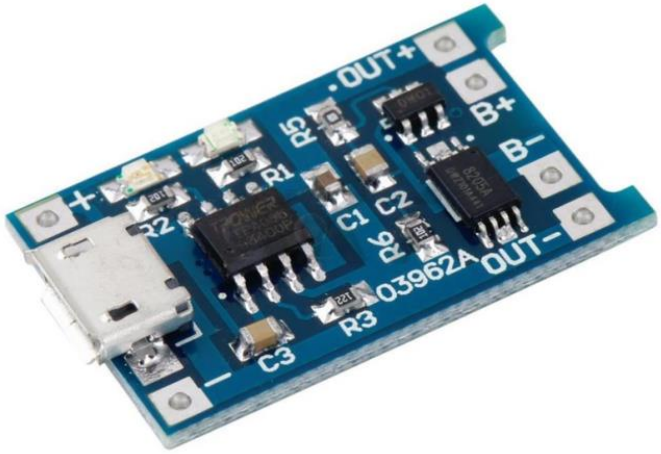
Lithium Battery Charger with Protection

5V USB 1A Lithium Battery Charging Board Charger Module with Protection. This versatile charger module is based on TP4056 IC, a constant-current/constant-voltage linear charger chip for single cell lithium-ion batteries. This charger module can be powered from USB or wall adapter. The features include current monitor, under voltage lockout, automatic recharge and two status LED to indicate charge termination and the presence of an input voltage.

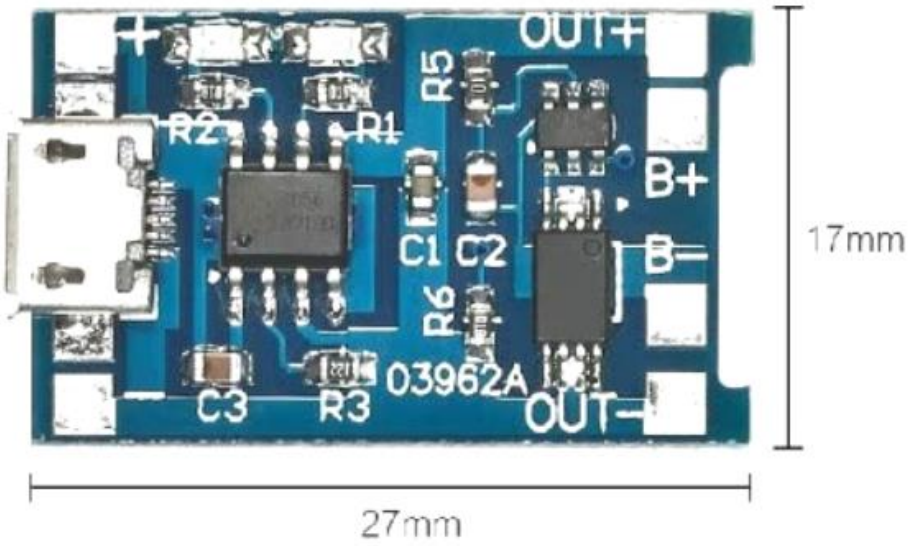


Brief Data:

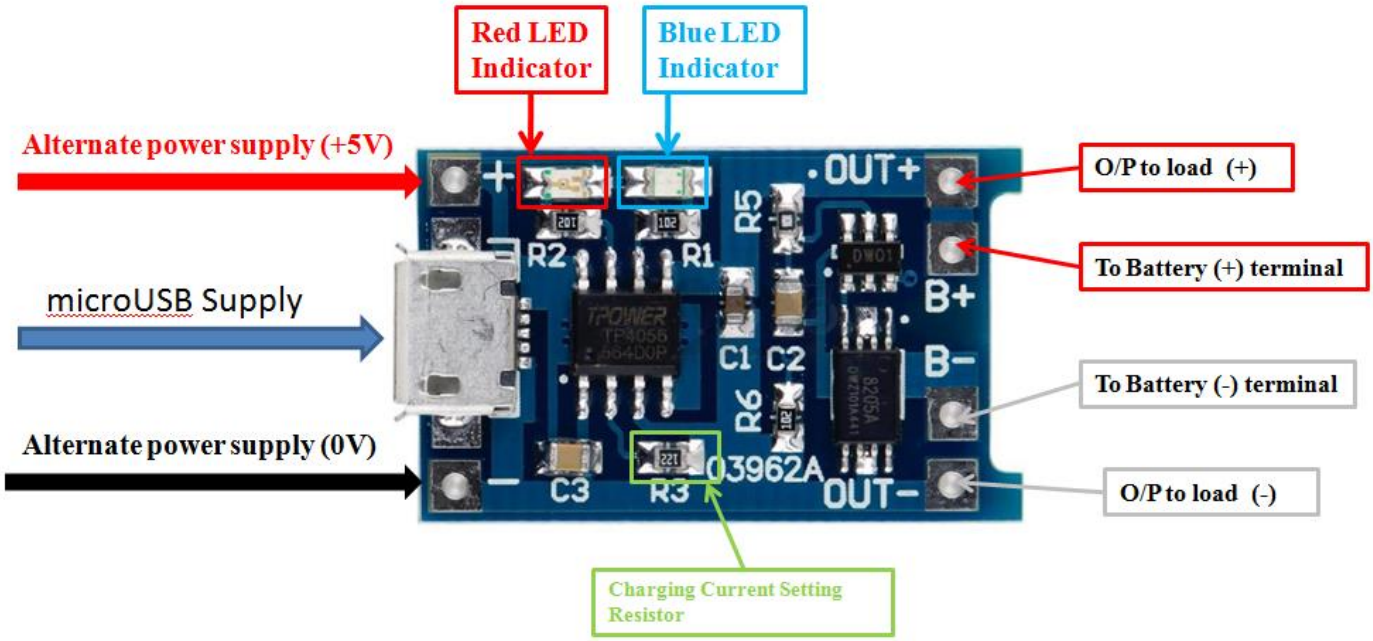
- High Quality double side PCB design.
- Charge mode - Linear charging.
- Charges Single Cell Li-Ion Batteries Directly from USB Port.
- Charging Current: Preset to 1A max. (with R3=1.2KΩ)
- C/10 Charge Termination.
- Preset 4.2V Charge Voltage with 1.5% Accuracy.
- Input voltage: 4.5V-5.5V.
- Full charge voltage: 4.2V.
- Led indicator- red is charging, blue is full charged.
- Power Input interface: USB and terminal pin.
- Work temperature: -10℃ to +85℃.
- Built-in protection circuit.
- Size- small to 27x17x1mm.

Mechanical Dimension:

Unit: mm



Functional Diagram:



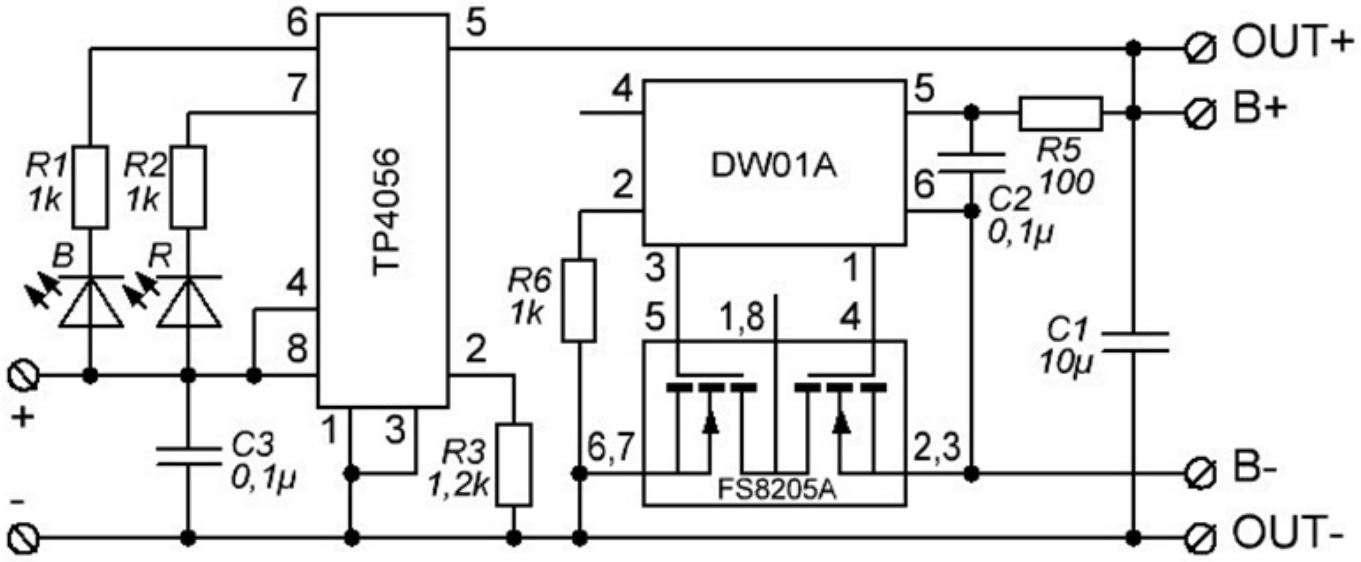
Function Description:

- Red LED Indicator: Light up when input supply is present or when charging is in progress.
- Blue LED Indicator: light up when battery is fully charged.
- B+/B- : Connect to battery +/- terminal respectively.
- Out+/Out- : Positive and negative output terminal (to be disconnected during charging to avoid damage to the TP4056 chip)
- +/- : Alternate power supply terminal pins.
- USB: can connect to USB wall adapter for charging.
- R3: programmable charging current setting resistor. Soldering skill needed for modification. See below table-1for resistor value setting.

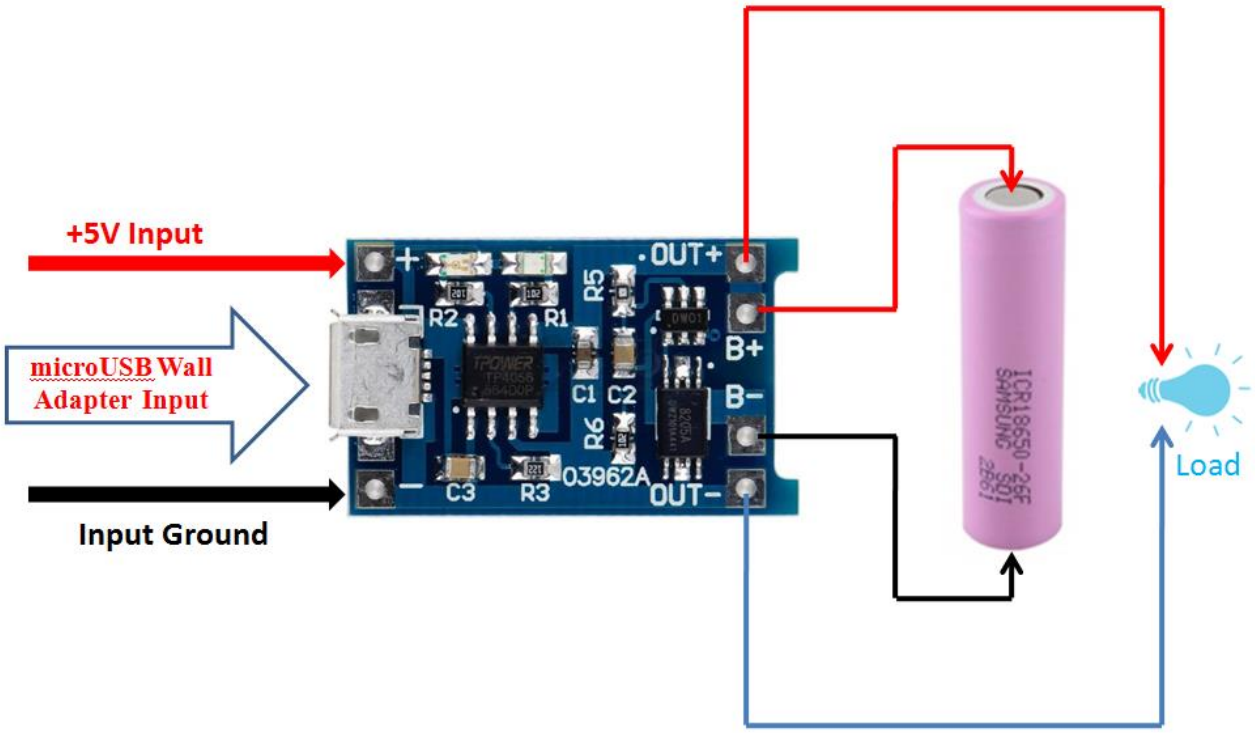
Table 1: R3 Resistance vs charging current

I_{Bat} (mA)	250	300	400	580	690	780	900	1000
R3 (kΩ)	5	4	3	2	1.66	1.5	1.33	1.2

Schematic Diagram:



Application Example:



Attention: Advise to disconnect the load when charging to prevent overload to the charger chip and cause damage to the module !!