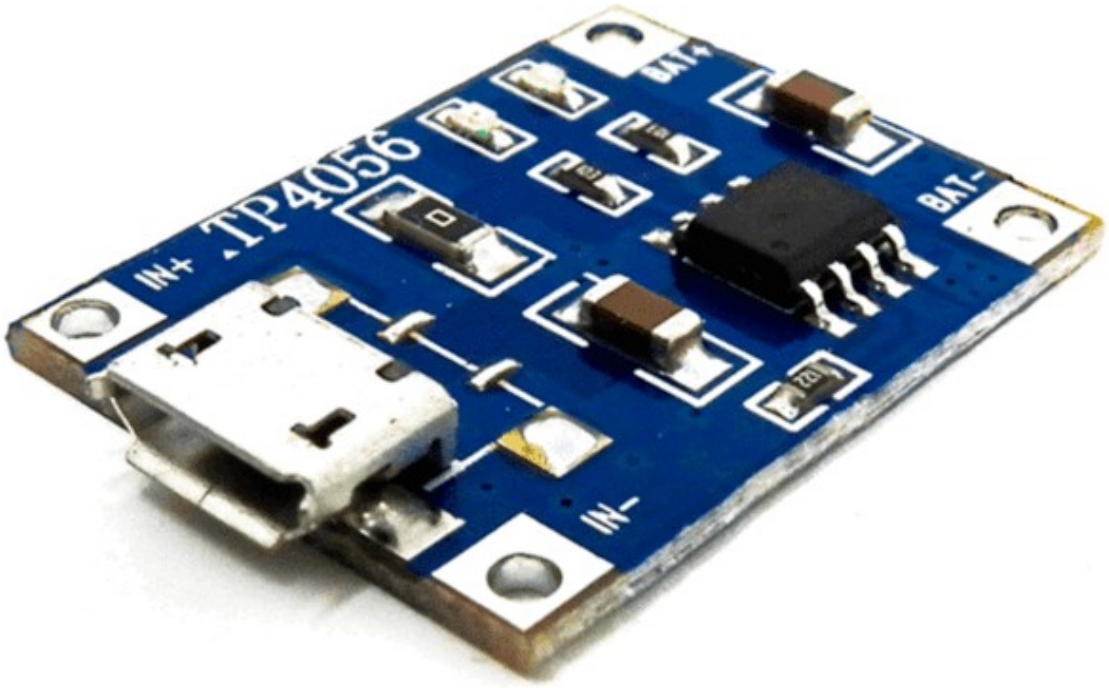
Welcome!

Thank you very much for purchasing our AZ-Delivery Charging Controller TP4056 module. On the following pages, we will introduce you to how to use and setup this handy device.

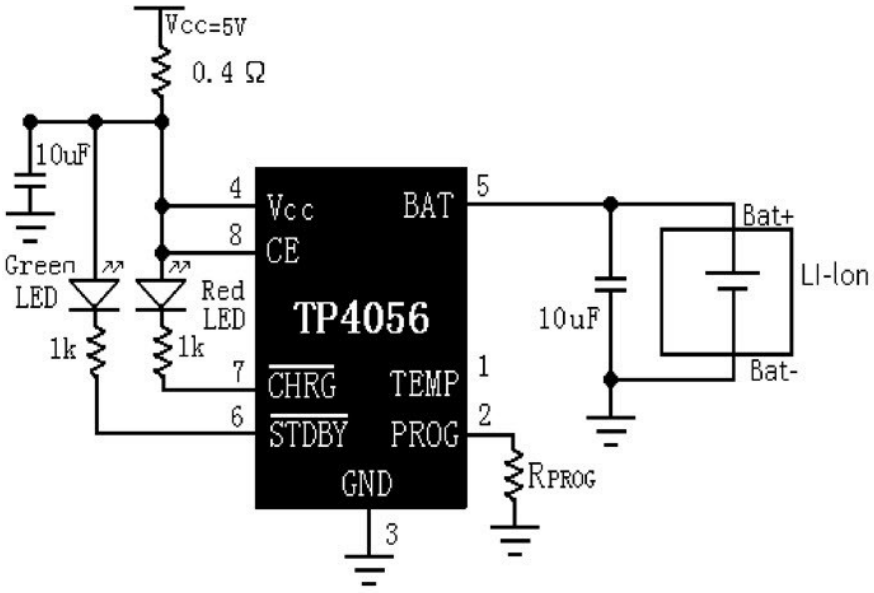
Have fun!



Almost all the electronic devices and gadgets run on battery power now-a-days. You can find many devices that run on battery like mobile phones, tablets, laptops, cameras, etc. Apart from the small devices mentioned above, cars, motorcycles, or electric vehicles also contain battery and require a battery charger mechanism.

And when a battery is involved, a battery charger is also involved. Battery Chargers are devices that enable batteries to recharge by putting energy into them.

The charging controller TP4056 is a low-cost lithium ion battery charger controller with TP4056 IC. It supports a constant current – constant voltage charging mechanism for single cell Li-Ion battery. The chip TP4056 is available in 8-pin SOP package and requires very minimum external components in order to build a lithium ion battery charger circuit.



Circuit diagram of the charging controller TP4056 module

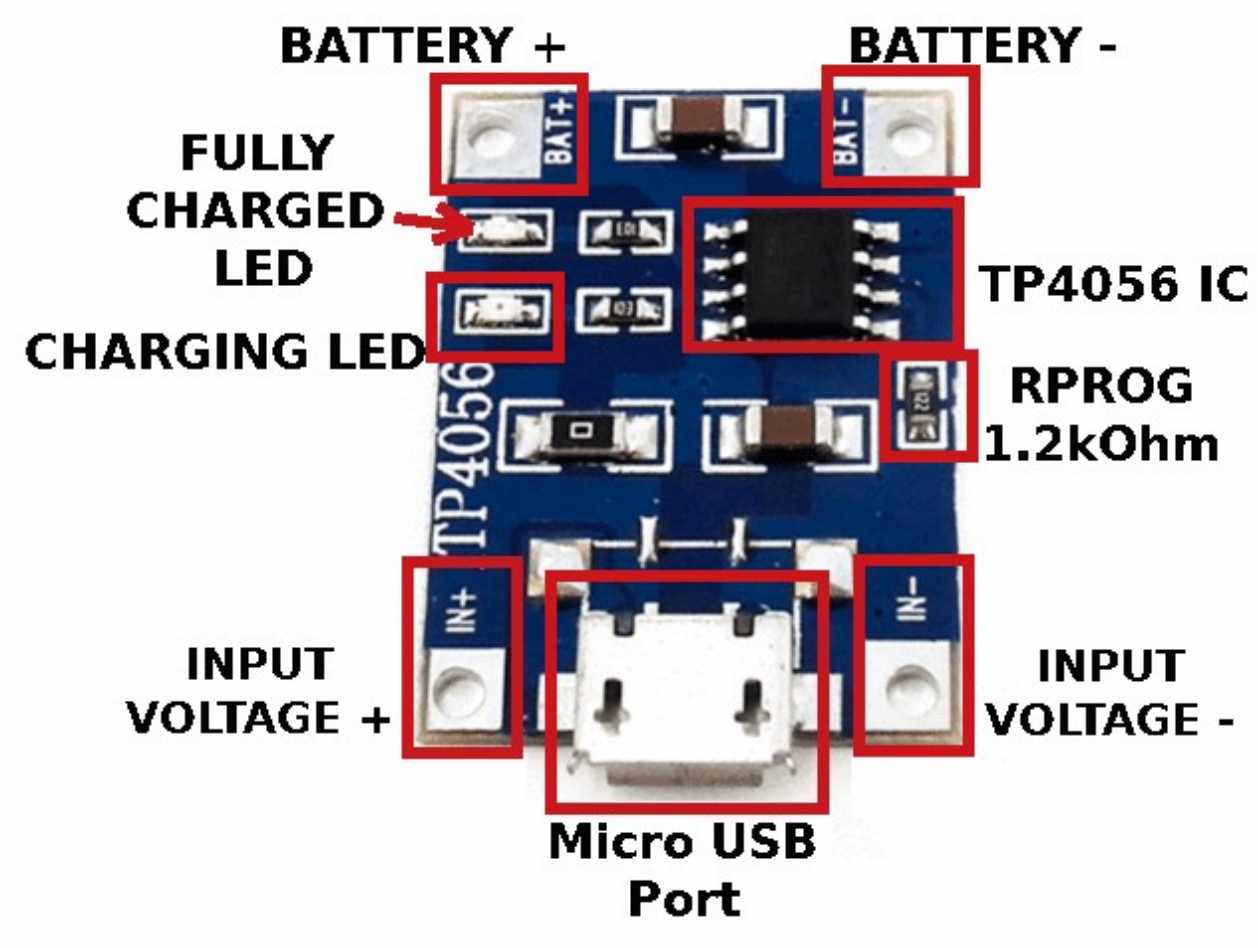
Technical Specifications

Method:	linear charge 1%
Charging current:	1A, adjustable (through RPROG)
Charge Accuracy:	1.5%
Input voltage:	4.5V to 5.5V
Input voltage limits:	**-0.3V to 8V**
Full charge voltage:	4.2V
LED indicator:	RED is charging, and GREEN is fully charged
Charging input interface:	micro USB
Working temperature:	-10℃ to +85℃
Polarity Reversal:	**NOT ALLOWED**
Dimensions:	25x19x10 mm

Applications

TP4056 Li-Ion battery charger module (or the IC) can be used in many applications like:

- Mobile Phones
- GPS Devices
- Digital Cameras
- Power Banks
- USB Chargers
- Handheld Computers



The charging controller TP4056 is a tiny module, it works with linear charging method. If you notice, there is a micro USB connector at the input side of the board. Using this, you can charge a Li-Ion battery from a USB source. Otherwise, there are connectors for input voltage as well as terminals for connecting the battery (image above).

It offers 1000mA charge current by default but it is adjustable from 50mA to 1000mA by soldering a RPROG resistor. The default resistor soldered in on the board is 1.2kOhm. Use the following table of resistance and current values to solder the right resistor to obtain the required current. A resistance and current table has been shown below.

Resistor (kOhm)	**>**	**Output Current (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

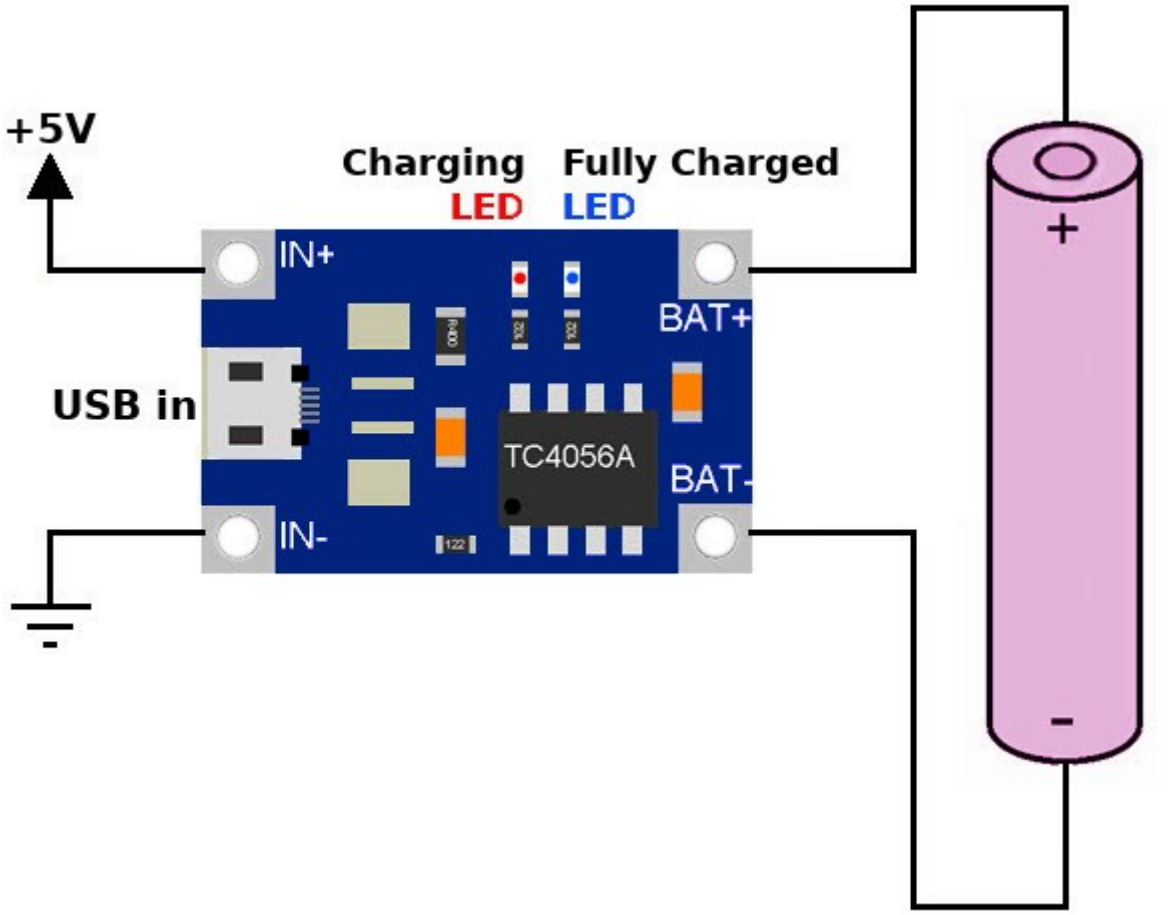
NOTE: This module and the circuit shown above doesn't include the temperature measurement.

You can charge only **ONE battery at a time**. In order to charge the battery, you can either use the IN+ and IN- terminals and provide 5V - 1A or alternatively, you can use a USB cable to directly charge from USB supply.

It is recommended that when you charge a battery, the current (in mA) offered by the breakout board is 37% - 40% of the battery capacity (in mAh). For example, if you are charging a battery of 1000mAh capacity, you should adjust the resistance in a way that the current offered is approximately 370mA - 400mA.

WARNING: Working with Li-Ion batteries is extremely dangerous and if you are not familiar with the connections, results might be fatal! Li-Ion battery might explode if wrongly used!

Connection diagram



You can charge only ONE battery at a time!

You've done it, you can now use your module for your projects.

Now it is time to learn and make the Projects on your own. You can do that with the help of many example scripts and other tutorials, which you can find on the internet.

If you are looking for the high quality products for Arduino and Raspberry Pi, AZ-Delivery Vertriebs GmbH is the right company to get them from. You will be provided with numerous application examples, full installation guides, eBooks, libraries and assistance from our technical experts.

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Have Fun!

Impressum

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