

TP4056 1A Li-ion

BATTERY CHARGER

Technical Manual Rev 1r0



The TP4056 is a complete constant-current/constant-voltage linear charger for single cell lithium-ion batteries. Applications are in cellular telephones, Portable devices, USB Bus-Powered Chargers. The boards needs a 5V power supply. The current resistor can be replaces for other charge currents.

Features:

- Complete linear Charger in SOP-8 package for single cell Li-ion batteries
- Constant-current/Constant-voltage
- Charges Single cell Li-ion batteries directly from USB port
- Soft-start limits inrush current
- Preset 4.2V charge voltage with 1.5% accuracy

General Specifications:

Input Supply Voltage: 5VDC
Input Supply Current: 150uA
Regulated Output voltage: 4.2V
BAT pin current: 500mA
PCB Dimensions: 25mm x 19.2mm

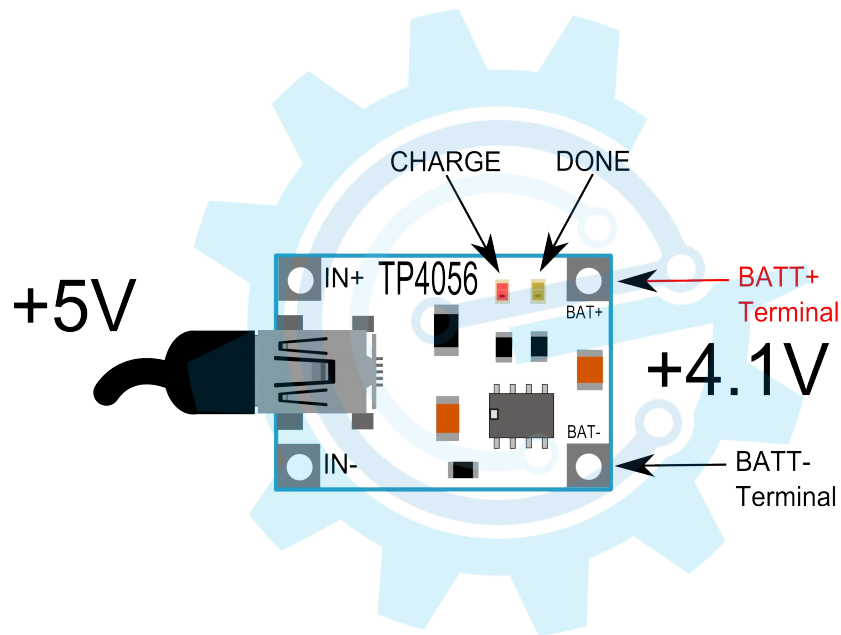


Figure 1. Major parts presentation of TP4056 1A Li-ION Battery Charger

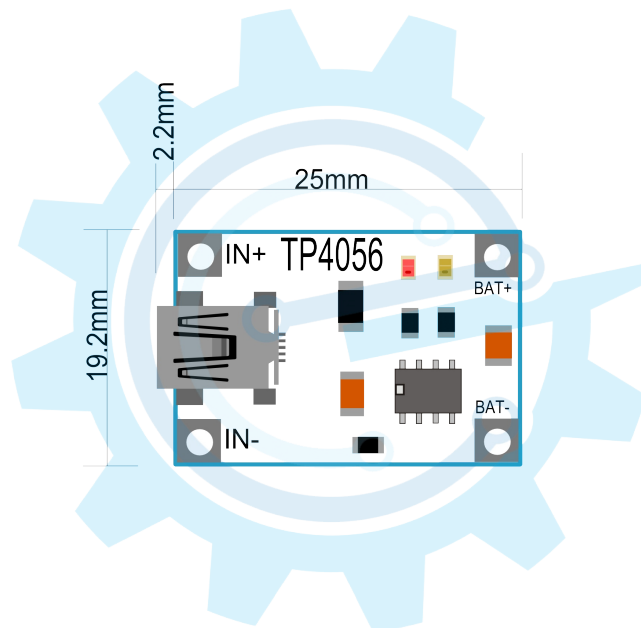


Figure 2. TP4056 breakout board PCB Dimensions

Table 1: Indicator light state

Charge State	Red LED CHRG	Green LED STDBY
Charging	bright	extinguish
Charge Termination	extinguish	bright
Vin too low; Temperature of battery too low or too high; no battery	extinguish	extinguish
BAT PIN Connect 10u Capacitance; Nobattery	Green LED bright, Red LED Coruscate T=1-4sec	

Table 2: Rprog Current Setting

Rprog (k)	I BAT (mA)
10	130
5	250
4	300
3	400
2	580
1.66	690
1.5	780
1.33	900
1.2	1000

TYPICAL APPLICATIONS

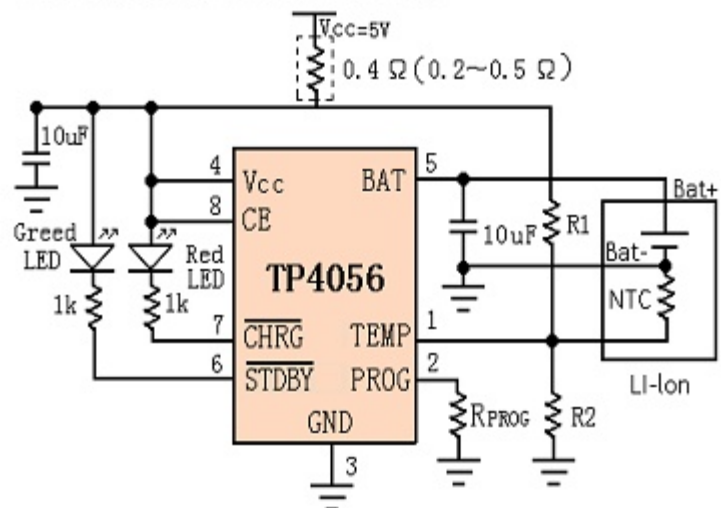


Table 3: Supported battery types

Type	Chemistry	Nominal Voltage	Charge voltage	Supported
ICR	LiCoO2	3.6/3.7 v	4.2 v	YES
IMR	LiMn	3.6/3.7 v	4.2 v	YES
IFR	LiFePO4	3.2/3.3 v	3.5/3.6 v	NO*

Table 4: Supported battery size

	Battery size 26650	Resistor Std.
	25500	Std.
	18650	Std.
	17670	Std.
	18500	Std.
	17500	Std.
	Smaller	Custom

Reference:

<http://lygte-info.dk/review/Review%20Charger%20TP4056%20UK.html>

<https://dlmh9ip6v2uc.cloudfront.net/datasheets/Prototyping/TP4056.pdf>