

LI-PO CHARGER
CODE 819

LEVEL 3

This Li-Po charger circuit is suitable for charging Li-Po battery. Ideal for charging cellular phone batteries, toys, etc.

Technical Specifications:

- Power supply : 12-15VDC. more than 600mA.
- Charge current : 400mA or 600mA (selectable).
- Charge Li-Po batteries from 1 to 2 cell.
- LED charge indication.
- Automatic charge cut-off circuit when battery is full.
- Power supply polarity protected.
- PCB dimensions : 3.73 x 2.44 in.

How to Work:

When supply voltage to the circuits (shown in Figure 1), IC2 will decrease the voltage to suitable with charging battery. IC1/1 and IC1/2 are controlled the output voltage of IC2. Switch SW2 is selected the number of cell and switch SW1 is adjusted the current charging.

In charging, when battery is full, IC1/1 and IC1/2 is fed the voltage to IC2 for cut-off charging causing TR4 and TR2 will stop working. The circuit will stop charging.

Circuit Assembling:

External connecting and fitting of components are

shown in Figure 2. It is recommended to assemble the circuit starting with a lower component i.e. diodes, resistor, electrolyte capacitors and transistors etc. Be careful while assembling and check for the matching of PCB poles and components before soldering as shown in Figure 3. Use a max. 40W. solder and soldering lead with a tin and lead ratio of 60/40 together with a joint solution inside. Recheck the assembled circuit for your own assurance. Better using a lead sucker or a lead wire absorber in case of misplacing component to protect PCB from damage.

Testing:

Connect the component following Figure 2 without connect the Li-Po battery. Supply the power supply to the circuit, LED LSW and LED L5V are lighted on. Measuring the voltage at TP point, adjust the voltage at VR1K to 4.2V (adjust VR1K at middle point) after that select the charging current by SW1 (position "H" is charging at 600mA and position "L" is charging at 400 mA). Select the number of cell by SW2 (position "1" is a cell and position "2" is 2 cell).

Connect the Li-Po battery to position "OUT", LED CHARGE is lighted on shows the circuit is charging. When the battery is full, LED LSW and LED CHARGE is lighted off. Disconnect the battery, wait until LED LSW is lighted on again when the circuit is prompted for charging again (if connect the battery while LED LSW light is off, the circuit cannot start charging. you have to wait until LED LSW light is on).

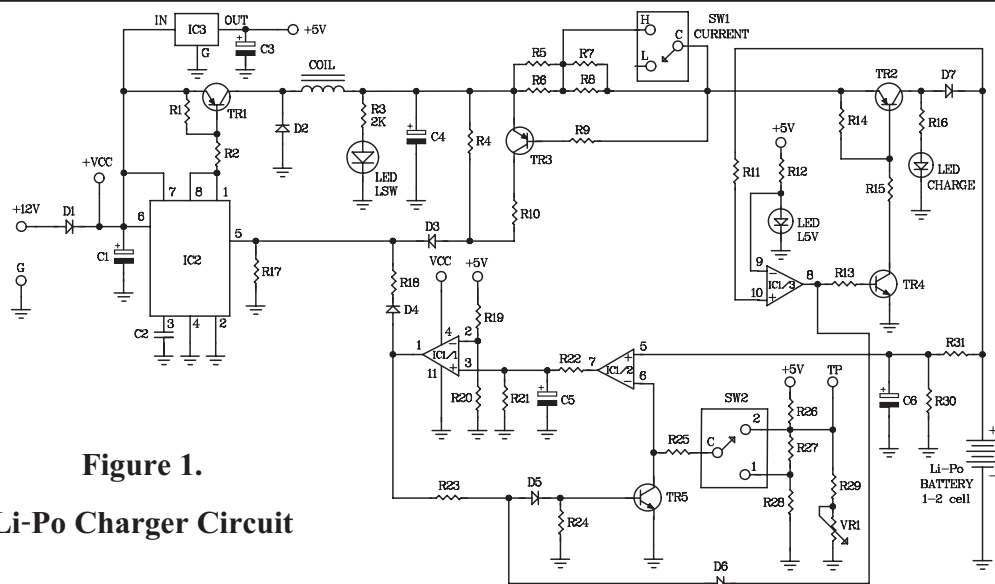
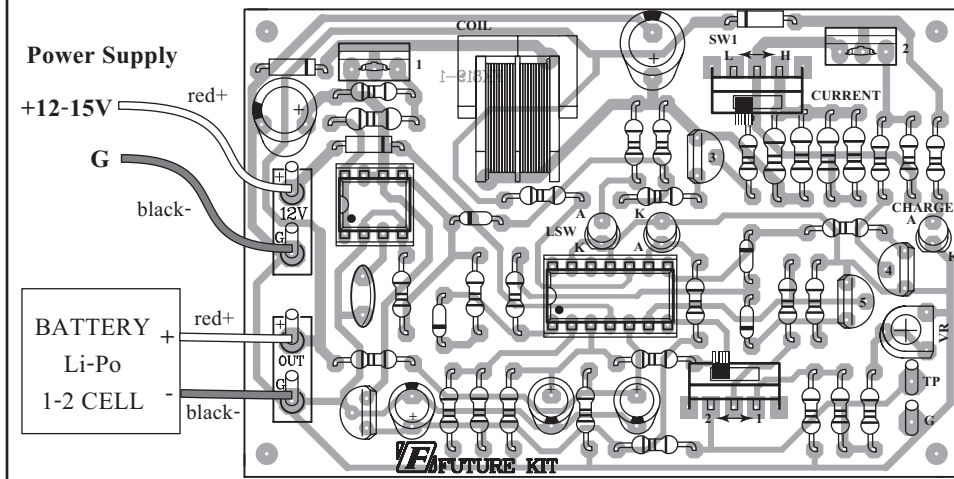


Figure 1.
Li-Po Charger Circuit

Figure 2. Circuit Assembling

FK819-1



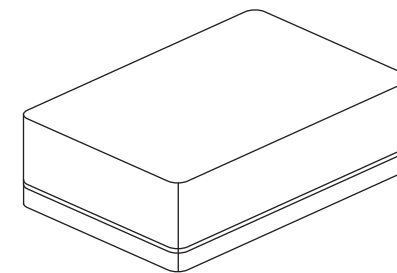
- SW1 :**
Select the current charging.
L=400mA. and H=600mA.
- SW2 :**
Select the number of cell.
1 = 1 cell (3.7V.)
2 = 2 cell (7.4V.)

Troubleshooting:

As the circuit has only a few components, the main cause of troubles will come from component misplacing and defaulted soldering. When the circuit does not work, check for the proper component placings and various soldering points.

Using:

- Supply the power supply to circuit, LED L5V and LSW light is on.
- Adjust the current by SW1 (H = 600mA and L = 400mA).
- Select the number of cell by SW2 (1 = 1 cell (3.7V) and 2 = 2 cell (7.4V).
- Connect the Li-Po battery to position "OUT", LED CHARGE light is on shows the circuit is charging. When the battery is full, LED LSW and LED CHARGE light is off.



NOTE:

FUTURE BOX FB04 is suitable for this kit.

Figure 3. Components Installing

