

## 1A Linear Li-Ion Battery Charge Management IC

### Overview

The TC4056A is a complete single-cell Li-Ion battery using a constant current/constant voltage linear charger. Its ESOP8/DIP8 package with heat sink on the bottom and low external component count make the TC4056A ideal for portable applications. TC4056A can work with USB power and adapter power.

The use of an internal P-MOSFET architecture, coupled with an anti-reverse charging circuit, eliminates the need for an external blocking diode, and thermal feedback automatically adjusts the charging current to limit the die temperature during high power operation or high ambient temperature conditions. The charge voltage is fixed at 4.2V, while the charge current can be set externally with a resistor. When the charging current drops to 1/10 of the set value after reaching the final float voltage, the TC4056A will automatically terminate the charging cycle.

When the input voltage (AC adapter or USB power) is removed, the TC4056A automatically enters a low current state, reducing battery leakage current to less than 2uA. The TC4056A can also be put into shutdown mode when power is available, reducing the supply current to 55u. Other features of the TC4056A include battery temperature detection, undervoltage lockout, automatic recharge and two LED status pins for indicating charging, end of charge

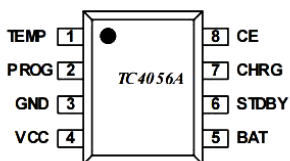
### Product Features

- Programmable charge current up to 1000mA
- No MOSFETs, sense resistors or blocking diodes required
- Complete Linearity in SOP package for Single-Cell Li-Ion Batteries
- Constant current/constant voltage operation with thermal regulation to maximize charge rate without
- 4.2V Preset charge voltage with  $\pm 1\%$  accuracy
- Charge current monitor output for battery charge detection
- Automatic recharge
- Charge status dual output, no battery and fault status display
- C/10 charge termination
- The supply current in standby mode is 55uA
- 2.9V trickle charge device version
- Soft-start limits inrush current
- Battery temperature monitoring function
- Available in 8-pin package (ESOP-8, DIP-8)

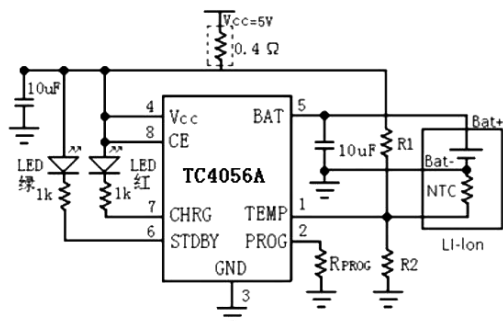
### Application Field

- Mobile phones, PDAs
- MP3, MP4 player
- Digital Camera
- E-Dictionary
- GPS
- Portable devices, various chargers

### Package Information



### Typical Application



Typical Application Circuit Diagram