

1A Lithium Ion Battery Linear Charger ME4056

General Description

ME4056 is a complete constant-current/constant voltage linear charger for single cell lithium-ion batteries. With a thermally enhanced 8-PIN SOP package on the bottom and low external component count make the ME4056 ideally suited for portable applications. Furthermore the ME4056 is specifically designed to work within USB power specifications.

No external sense resistor is needed and no blocking diode is required due to the internal PMOSFET architecture. Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The charge voltage is fixed at 4.2V (ME4056A is 4.34V), and the charge current can be programmed externally with a single resistor. The ME4056 automatically terminates the charge cycle when the charge current drops to 1/10th the programmed value after the final float voltage is reached.

When the input supply (wall adapter or USB supply) is removed the ME4056 automatically enters a low current state dropping the battery drain current to less than 2 μ A. The ME4056 can be put into shutdown mode reducing the supply current to 55 μ A.

Other features include Battery temperature monitor, under-voltage lockout, automatic recharge and two status pins to indicate charge and charge termination.

Applications

- Cellular Telephones
- Digital Still Cameras
- MP3 Players
- Bluetooth Applications
- Portable Devices
- USB Bus-Powered Chargers

Features

- Protection of battery cell reverse connection
- Programmable charge current up to 1A
- No MOSFET sense resistor or blocking diode required
- Complete linear Charger in SOP8 Package for single Cell Lithium-Ion Batteries.
- Constant-Current/Constant-Voltage operation with thermal regulation to maximize Rate Without risk of overheating.
- Preset 4.2V (ME4056A is 4.34V) charge voltage with $\pm 1\%$ accuracy
- Automatic Recharge
- Two Status Indication for Charge status, no battery and battery failure indicators
- C/10 charge termination
- 55 μ A supply current in shutdown
- 2.9V trickle current charge threshold
- Soft-Start limits inrush current
- Battery Temperature Sensing

Typical charge cycle (1000mAh battery)

