

Standalone Linear Li-Ion Battery Charger With Thermal Regulation in ThinSOT

DESCRIPTION

The EUP8054 is a complete constant-current/constant-voltage linear charger for single cell lithium-ion batteries. Its ThinSOT package and low external component count make the EUP8054 ideally suited for portable applications. Furthermore, the EUP8054 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 MOSFET 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, and the charge current can be programmed externally with a single resistor. The EUP8054 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 EUP8054 automatically enters a low current state, dropping the battery drain current to less than 2 μ A. The EUP8054 can be put into shutdown mode, reducing the supply current to 25 μ A.

Other features include charge current monitor, undervoltage lockout, automatic recharge and a status pin to indicate charge termination and the presence of an input voltage.

FEATURES

- Programmable Charge Current Up to 800mA
- No MOSFET, Sense Resistor or Blocking Diode Required
- Complete Linear Charger in ThinSOT Package for Single Cell Lithium-ion Batteries
- Constant-Current/Constant-Voltage Operation with Thermal Regulation to Maximize Charge Rate Without Risk of Overheating
- Charges Single Cell Li-Ion Batteries Directly from USB Port
- Preset 4.2V Charge Voltage with $\pm 1\%$ Accuracy
- Charge Current Monitor Output for Gas Gauging
- Automatic Recharge
- Charge Status Output Pin
- C/10 Charge Termination
- 25 μ A Supply Current in Shutdown
- 2.9V Trickle Charge Threshold (EUP8054)
- Available Without Trickle Charge (EUP8054X)
- Soft-Start Limits Inrush Current
- Available in TSOT-25, TDFN-6(3mm*3mm) Package
- RoHS Compliant and 100% Lead (Pb)-Free

APPLICATIONS

- Cellular Telephones/ PDAs/ MP3 Players
- Charging Docks and Cradles
- Bluetooth Applications