Switch Mode Li-Ion/Polymer Battery Charger

DESCRIPTION

The TP8056 is a constant current, constant voltage Li-Ion battery charger controller that uses a current mode PWM step-down (buck) switching architecture. With a 500kHz switching frequency, the TP8056 provides a small, simple and efficient solution to fast charge one (4.2V) or two (8.4V) cell lithium-ion batteries.

The TP8056 charges the battery in three phases: conditioning, constant current, and constant voltage. An external sense resistor sets the charge current with ±10% accuracy. An internal resistor divider and precision reference set the final float voltage to 4.2V per cell with ±1% accuracy.

An internal comparator detects the near end-of-charge condition while an internal timer sets the total charge time and terminates the charge cycle. The TP8056 automatically re-starts the charge if the battery voltage falls below an internal threshold, 4.05V per cell. The TP8056 also automatically enters sleep mode when DC supplies are removed.

The TP8056 is available in the 8-lead SOP and 10-lead TDFN packages.

FEATURES

- Wide Input Supply Voltage Range:
  - 4.7V to 20V – 4.2 Version
  - 8.9V to 20V – 8.4A Version
- 500kHz Switching Frequency
- End-of-Charge Current Detection Output
- 7 Hour Charge Termination Timer
- ±1% Charge Voltage Accuracy
- ±10% Charge Current Accuracy
- Low 10μA Reverse Battery Drain Current
- Automatic Battery Recharge
- Automatic Trickle Charging of Low Voltage Batteries
- Automatic Sleep Mode for Low Power Consumption
- Battery Temperature Sensing
- Stable with Ceramic Output Capacitor
- 8-Lead SOP and 10-Lead TDFN Packages
- RoHS Compliant and 100% Lead (Pb)-Free

APPLICATIONS

- Small Notebook Computer
- Portable DVD
- Handheld Instruments

Ordering Information

TP8056-□□□□

- F : Pb-Free
- Package Type
  - QV : TDFN-10
  - SO : SOP-8
- Output Voltage Option
  - 42 : 4.2V
  - 84 : 8.4V

Marking Information

For marking information, contact our sales representative directly or through a TPmicro distributor located in your area.

Typical Operating Performance