

DESCRIPTION

The TCS6209 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 TCS6209 provides a small, simple and efficient solution to fast charge one (4.2V) or two (8.4V) cell lithium-ion batteries.

The TCS6209 charges the battery in three phases: conditioning, constant current, and constant voltage. An external sense resistor sets the charge current with $\pm 10\%$ accuracy. An internal resistor divider and precision reference set the final float voltage to 4.2V per cell with $\pm 1\%$ 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 TCS6209 automatically re-starts the charge if the battery voltage falls below an internal threshold, 4.05V per cell. The TCS6209 also automatically enters sleep mode when DC supplies are removed.

The TCS6209 is available in the 8-lead SOP package.

FEATURES

- Wide Input Supply Voltage Range:
 - 4.8V to 20V – 4.2 Version
 - 8.9V to 20V – 8.4 Version
- 500kHz Switching Frequency
- End-of-Charge Current Detection Output
- 12 Hour Charge Termination Timer
- $\pm 1\%$ Charge Voltage Accuracy
- $\pm 10\%$ Charge Current Accuracy
- Low 10 μ A 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
- Support up to 3A Charge Current
- 8-Lead SOP Package
- RoHS Compliant and 100% Lead (Pb)-Free Halogen-Free

APPLICATIONS

- Small Notebook Computer
- Portable DVD
- Handheld Instruments

Typical Operating Performance

