

LTC News for Immediate Release

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100mA to 1A Charger in 9mm² for New 4.375V

Float Voltage Li-Ion Batteries

MILPITAS, CA. – February 23, 2005 – Linear Technology Corporation introduces the LTC4061-4.4, a compact standalone linear 1-cell 4.375V (4.4V maximum) Li-Ion battery charger with advanced features that improve charging safety, simplify charge termination and status reporting, and prolong battery life. For safety, the LTC4061-4.4 is equipped with a thermistor interface for temperature qualified charging, an adjustable timer as a backup charge termination, and precision float voltage to prevent cell overcharging. To eliminate the risk of overheating while charging at maximum rate, a patented thermal regulation circuit keeps the LTC4061-4.4's junction temperature at a safe level. The device's I/O pins report the state-of-charge during trickle, normal and end-of-charge modes and indicate the presence of an AC adapter or faulty battery. The LTC4061-4.4 prolongs battery life by eliminating unnecessary re-charge cycles with its SmartStart™ feature. The IC offers four methods for charge termination: user adjustable current and time, external digital control or automatic C/10. The LTC4061-4.4 is housed in a compact 3mm x 3mm DFN package and is ideal for charging a battery from a wall adapter or USB in MP3 players, digital cameras, PDAs and cell phones.

The LTC4061-4.4 can charge new 4.375V float voltage Li-Ion batteries with $\pm 0.4\%$ accuracy. It requires no external sense resistor, MOSFET or blocking diode, greatly simplifying design. In addition, the LTC4061-4.4 includes a soft-start circuit to minimize the inrush current at the start of a charge cycle. For USB powered charging, the logic pin from a USB controller can select the charge current, eliminating dependence on external discrete components. After a battery is fully charged, the LTC4061-4.4 enters a standby mode. Because frequent re-charge cycles decrease battery capacity and shorten battery life, the SmartStart feature starts re-charging the battery only if the battery voltage drops below 4.275V. This feature reduces unnecessary charge cycles, prolonging battery life. At any point in the charge cycle, the LTC4061-4.4 can be shutdown, limiting battery drain current to less than 2uA.

(more...)

The LTC4061EDD-4.4 is offered in a 10-lead 3mm x 3mm DFN package. 1,000-piece pricing starts at \$2.05 each.

Summary of Features: LTC4061-4.4

- Standalone Charger with Charge Current Programmable to 1A
- Charges Single Cell Li-Ion Batteries Directly from USB Port
- 4.375V Preset Charge Voltage
- Thermistor Input for Temperature Qualified Charging
- Power Supply Present Logic Output
- Thermal Regulation Maximized Charging Rate without Risk of Overheating
- SmartStart Feature Prolongs Battery Life

COMPANY BACKGROUND: Linear Technology Corporation was founded in 1981 as a manufacturer of high performance linear integrated circuits. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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