

LTC News for Immediate Release

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**Dual Input Li-Ion Battery Charger with
Synchronous 600mA Buck Converter**

MILPITAS, CA – February 1, 2006 – Linear Technology Corporation announces the LTC3550-1, an efficient, compact power management solution for handheld applications containing a dual input Li-Ion battery charger and a high efficiency synchronous buck regulator, all housed in a low-profile 16-lead 3mm x 5mm DFN package. The linear battery charger automatically selects the appropriate power source to efficiently charge single-cell Li-Ion batteries: a wall adapter or a USB port. Standalone operation simplifies design, eliminating the need for an external microprocessor for charge termination. Using a constant-current/constant-voltage algorithm, the charger can deliver up to 950mA of charge current from a wall adapter supply, or up to 500mA of charge current from a USB supply. The final float voltage accuracy is $\pm 0.6\%$ in either case. The LTC3550-1's battery charger is equipped with a patented thermal regulation scheme which maximizes the charging rate without the risk of overheating. To preserve battery energy, it draws $<6\mu\text{A}$ from the battery terminal in standby and $<1\mu\text{A}$ in shutdown mode.

The LTC3550-1's integrated synchronous buck regulator can deliver up to 600mA continuous output current. It uses internal switches with an $R_{\text{DS(ON)}}$ of only 0.40 Ohm to deliver efficiencies as high as 93%, maximizing battery run time. In addition, automatic Burst Mode[®] operation optimizes efficiency at light loads, featuring a quiescent current of only 20 μA ($<1\mu\text{A}$ in shutdown). Using constant frequency current mode architecture, the buck regulator operates from an input voltage range of 2.5V to 5.5V, making it ideal for single-cell Li-Ion or multi-cell alkaline or NiMH input applications. The buck regulator has a fixed output voltage of 1.875V, and its high 1.5MHz switching frequency allows the utilization of tiny low cost capacitors and inductors less than 1mm in height. Furthermore, the regulator is stable with ceramic capacitors, achieving low output voltage ripple.

(more...)

The LTC3550-1 is available from stock in a compact 5mm x 3mm x 0.75mm DFN-16 package. Pricing starts at \$2.00 each for 1,000-piece quantities.

Photo Caption: Dual Input Li-Ion Charger with 600mA Buck

Summary of Features: LTC3550-1

- Charges Single-Cell Li-Ion Batteries from Wall Adapter & USB Inputs
- Automatic Input Power Detection & Selection
- Charge Current Programmable up to 950mA from Wall Adapter Input
- High Efficiency 600mA Synchronous Buck Regulator
- No External MOSFET, Sense Resistor or Blocking Diode Needed
- Thermal Regulation Maximizes Charging Rate without Overheating
- Preset Charge Voltage with $\pm 0.6\%$ Accuracy
- Programmable Charge Current Termination
- 1.5MHz Constant Frequency Operation (buck converter)
- 18uA Suspend Current in Shutdown
- Independent "Power Present" Status Outputs
- Charge Status Outputs
- Automatic Recharge
- Thermally-Enhanced, Low Profile (0.75mm) 16-Lead 3mm x 5mm DFN package

About Linear Technology Corporation

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. 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. For more information, visit www.linear.com

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