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32V Monolithic 2-Cell Li-Ion/Polymer Battery Charger Delivers up to 2A in Compact 3mm x 3mm Package

MILPITAS, CA – February 12, 2009 – Linear Technology Corporation introduces the LT3650-8.2, a compact, monolithic high-voltage battery charger for 2-cell Li-Ion/Polymer batteries. The device's switch-mode architecture minimizes power dissipation without compromising board space. The LT3650-8.2 accepts inputs up to 32V and has a 40V absolute maximum rating for added system margin. User-selectable timer or C/10 termination requires no external microcontroller and simplifies the design. Charge current is programmable and dynamically adjustable up to 2A; the power device is integrated on chip to save board space. The LT3650-8.2 does not require external high-precision resistors to set the float voltage, further saving cost and space. Applications include industrial handheld instruments, 12V to 24V automotive and heavy equipment, desktop cradle chargers and small notebook or tablet computers.

The LT3650-8.2's high operating frequency of 1MHz and current mode architecture allow the use of small inductors and capacitors, minimizing noise and filtering needs. Final float voltage accuracy is specified at $\pm 0.5\%$, charge current accuracy is $\pm 5\%$ and C/10 detection accuracy is $\pm 2.5\%$. Once charging is terminated, the LT3650-8.2 automatically enters a low current standby mode that reduces the input supply current to 85uA. In shutdown, the input bias current is reduced to 15uA. The LT3650-8.2 maximizes battery life during all non-charging periods, draining less than 1uA from the battery. For safety and autonomous charge control, the LT3650-8.2 includes features such as automatic restart and preconditioning, a thermistor input for temperature-qualified charging, programmable input current limit, bad battery detection and binary coded status output pins.

The LT3650-8.2 is available in a compact, low-profile (0.75mm) 12-pin 3mm x 3mm DFN package, and is offered in both E and I grade versions, both operating from -40°C to $+85^{\circ}\text{C}$. Pricing starts at \$2.80 and \$3.22 each, respectively, in 1,000-piece quantities. For more information, visit www.linear.com.


Photo Caption: 32V, 2A Monolithic 2-Cell Li Charger

Summary of Features: LT3650-8.2

- Wide Input Voltage Range: 9V to 32V (40V Absolute Maximum)
- Programmable Charge Current up to 2A
- 2 Cell Li-Ion/Polymer Charge Capability, 8.2V Charge Voltage
- User-Selectable Termination: C/10 or Programmable Termination Timer
- Dynamic Charge Rate Programming/Soft-Start Pin
- Programmable Input Current Limit
- 1MHz Switching Frequency Enables Small External Components
- $\pm 0.5\%$ Charge Voltage Accuracy
- $\pm 5\%$ Charge Current Accuracy
- $\pm 2.5\%$ C/10 Detection Accuracy
- NTC Resistor Temperature Monitor
- Automatic Recharge
- Automatic Preconditioning
- Binary Coded Open-Collector Charge Status Pins
- Bad Battery Detection with Auto-Reset
- Compact, Low-Profile (0.75mm) 3mm x 3mm DFN-12 Package

About Linear Technology

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, uModule[™] products, 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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