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High Voltage Battery Stack Monitor Supports Hybrid/Electric Vehicles & Battery Backup Systems

MILPITAS, CA – September 22, 2008 – Linear Technology announces the LTC6802, a highly integrated multicell battery monitoring IC capable of measuring up to 12 individual battery cells. The device's proprietary design allows multiple LTC6802s to be stacked in series without optocouplers or isolators, for precision voltage monitoring of every cell in long strings of series-connected batteries. Long battery strings enable high power, rechargeable applications, such as electric and hybrid electric vehicles, scooters, motorcycles, golf carts, wheelchairs, boats, forklifts, robotics, portable medical equipment, and uninterruptible power supply (UPS) systems.

With superior energy density, Lithium-Ion batteries are poised to be the power source of choice for these applications. However, designing a large, highly reliable and long-lasting Li-Ion battery stack is a very complex problem. Li-Ion cells are sensitive to overcharging or over-discharging, requiring that each cell in a stack is carefully managed. The LTC6802 makes this possible with quick and accurate measurements of all cell voltages, even in the presence of stack voltages over 1000V.

The maximum total measurement error is guaranteed at less than 0.25% from -40°C to 85°C and all cell voltages in a battery stack can be measured within 13ms. Each cell is monitored for undervoltage and overvoltage conditions, and an associated MOSFET switch is available to discharge overcharged cells. Each LTC6802 communicates via a 1MHz serial interface, and includes temperature sensor inputs, GPIO lines and a precision voltage reference.

The LTC6802 was designed for the environmental and reliability challenges of automotive and industrial applications. It is fully specified for operation from -40°C to 85°C and offers diagnostics and fault detection. The LTC6802 is a small 8mm x 12mm surface mount device. The combined robustness, exceptional precision and tiny package directly address the critical requirements of emerging and advanced battery technologies.

“The LTC6802 provides a precision analog interface for high performance battery stacks,” says Mike Kultgen, design manager for Linear Technology. “By handling the data acquisition task, the LTC6802 enables designers to implement state-of-the-art battery management techniques.”

Priced at \$9.95 each in 1,000-piece quantities, samples, demonstration boards and the data sheet are now available at www.linear.com. The product will be available in production quantities in the fourth calendar quarter 2008.


Photo Caption: Precision, High Voltage Multicell Battery Stack Monitor

Summary of Features: LTC6802

- 0.25% Maximum Total Measurement Error from -40°C to 85°C
- Stackable Architecture Enables 1000V+ Systems
- $\Delta\Sigma$ ADC with Inherent FIR Filtering
- 1MHz Serial Interface with Packet Error Checking
- Onboard FETs for Cell Discharge
- Temperature Sensor Inputs
- Built-In Precision 3V Reference & 5V Regulator
- Diagnostics & Fault Detection
- AEC-Q100
- 44-Lead SSOP Package
- Fully Specified for -40°C to 85°C Operation

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. For more information, visit www.linear.com.

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