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7V, 500mA Synchronous Buck-Boost DC/DC Converter Provides Extended Battery Run Time in Handheld Applications

MILPITAS, CA – February 24, 2009 – Linear Technology announces the LTC3534, a 7V synchronous buck-boost converter that can deliver up to 500mA of output current to a regulated output above, below or equal to the input using a single inductor. The device's topology provides a continuous transfer through all operating modes making it ideal for three- or four- cell Alkaline/NiCad/NiMH or single cell lithium applications which must maintain a constant output voltage even as the battery voltage declines below the output. A typical application is alkaline cells with an input voltage range of 3.6V to 6.4V, powering a 5V output rail. In most cases this Buck-Boost DC/DC Converter can add up to 25% more battery run-time compared to a traditional SEPIC solution. The LTC3534's constant 1MHz switching frequency ensures low noise while minimizing the size of external components. The combination of tiny externals and a 3mm x 5mm DFN (or SSOP-16) provide a tiny solution footprint, typically required in handheld applications.

The LTC3534 includes two N-Channel MOSFETs and two P-Channel MOSFETs (215mOhm/275mOhm and 260mOhm, respectively) to deliver efficiencies of up to 94%. Burst Mode[®] operation requires only 25uA of quiescent current while shutdown current is less than 1uA, further extending battery run-time. If the application is noise sensitive, the PWM pin can also be configured to provide forced continuous operation to reduce noise and RF interference. Other features include soft-start, current limiting, thermal shutdown and output disconnect.

LTC3534EDD is available from stock in a 16-lead 3mm x 5mm DFN package, and the LTC3534EGN is available in a 16-lead SSOP package. Pricing for both versions is \$3.15 each in 1,000 piece quantities. For more information, visit www.linear.com.


Photo Caption: 7V Buck-Boost Synchronous DC/DC Offers Extended Battery Run-Time

Summary of Features: LTC3534

- Regulated Output with Input Voltages Above, Below or Equal to the Output
- 2.4V to 7V Input & 1.8V to 7V Output Voltage Ranges
- 5V V_{OUT} at 500mA from 4 AA Cells
- Single Inductor
- Synchronous Rectification: Up to 94% Efficiency
- Burst Mode[®] Operation with 25uA IQ
- Output Disconnect in Shutdown
- 1MHz Switching Frequency
- <1uA Shutdown Current
- Small Thermally Enhanced 16-Lead (3mm x 5mm x 0.75mm) DFN & 16-Lead SSOP Packages

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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