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1A, 1MHz Synchronous Boost Regulator Offers Output Disconnect & Soft-Start in a 2mm x 3mm DFN

MILPITAS, CA – September 13, 2007 – Linear Technology Corporation announces the LTC3528/B, 1MHz, current mode, synchronous boost DC/DC converters with output disconnect and integrated soft-start capability. Their internal 1A switches can deliver output voltages as high as 5.25V from an input voltage range of 0.70V (start-up, 0.5V when running) to 5V, making them ideal for Li-Ion/Polymer or single/multicell alkaline/NiMH applications. The LTC3528/B can deliver up to 200mA of continuous output current (at 3.3V) from a single alkaline cell or 400mA from dual alkaline cells. Synchronous rectification enables efficiencies of up to 94% while Burst Mode[®] operation lowers quiescent current to only 12uA(LTC3528), providing extended battery run-time in handheld applications. The combination of a 2mm x 3mm DFN-8 package and a constant switching frequency of 1MHz minimize both inductor and capacitor sizes, providing a tiny solution footprint required in handheld applications.

The LTC3528/B has internal switches with an $R_{DS(ON)}$ of only 0.175 Ohm (N-Channel) and 0.25 Ohm (P-Channel) to deliver efficiencies as high as 94%. The output disconnect feature allows the output to be completely discharged in shutdown. It also limits the inrush of current during start-up, minimizing surge currents seen by the input supply. The LTC3528/B will also regulate the output when the input voltage exceeds the output voltage. Additional features include anti-ringing control, short-circuit protection, soft-start, and thermal protection. The LTC3528/B delivers an ideal solution for boost applications requiring up to 400mA of output current and where a small solution size and low maximum battery run-time are defining factors.

For applications demanding the lowest possible noise operation, The LTC3528B version is available with the Burst Mode feature disabled. This version runs in continuous mode at all current levels, slightly reducing light load efficiency. However, it minimizes possible interference of switching noise with onboard noise suppression circuitry.

LTC3528EDDB and LTC3528BEDDB are both available from stock in 8-lead DFN packages. 1,000-piece pricing starts at \$1.95 each.

Photo Caption: Compact, Efficient 1A Booster in 2mm x 3mm DFN

Summary of Features: LTC3528/B

- Delivers 3.3V at 200mA from a Single Alkaline/NiMH Cell or 3.3V at 400mA from Two Cells
- V_{IN} Start-Up Voltage: 700mV
- 1.6V to 5.25V V_{OUT} Range
- Up to 94% Efficiency
- Output Disconnect
- 1MHz Fixed Frequency Operation
- $V_{IN} > V_{OUT}$ Operation
- Integrated Soft-Start
- Current Mode Control with Internal Compensation
- Burst Mode Operation with 12uA Quiescent Current (LTC3528)
- Low Noise PWM Operation (LTC3528B)
- Internal Synchronous Rectifier
- Logic Controlled Shutdown: <1uA
- Anti-Ringing Control
- Low Profile (2mm x 3mm x 0.75mm) DFN 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, 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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Press Contacts:

John Hamburger, Director Marketing Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233