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

MILPITAS, CA – May 13, 2008 – Linear Technology Corporation announces the LTC3539/-2, 1MHz/2MHz, current mode, synchronous boost DC/DC converters with output disconnect and integrated soft-start. Their internal 2A switches can deliver output voltages as high as 5.25V from an input voltage range of 0.70V at start-up, (0.5V when running) to 5V, making them ideal for Li-Ion/Polymer or single/multicell alkaline/NiMH applications. The LTC3539/-2 can deliver up to 900mA of continuous output current (at 3.3V) from dual alkaline cells or 900mA of continuous output current (at 5V) from a single-cell Li-Ion battery. Synchronous rectification enables efficiencies up to 94%, while Burst Mode® operation lowers quiescent current to only 10uA, 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 (2MHz for the LTC3539-2) minimize both inductor and capacitor sizes, providing a tiny solution footprint required in handheld applications.

The LTC3539/-2 have internal switches with an $R_{DS(ON)}$ of only 0.09 Ohm (N-Channel) and 0.125 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 LTC3539/-2 will also regulate the output voltage when the input voltage exceeds the output voltage, making the device compatible with any battery chemistry. For applications demanding the lowest possible noise operation, the LTC3539/-2 can be set via an external pin to operate in a continuous frequency mode. This version runs in continuous mode at all current levels to minimize possible interference of switching noise with noise-sensitive circuitry slightly reducing light load efficiency. Additional features include anti-ringing control, short-circuit protection, soft-start, and thermal protection. The LTC3539/-2 delivers an ideal solution for boost applications requiring up to 900mA of output current and where a small solution size and low maximum battery run-time are defining factors.

LTC3539EDCB and LTC3539EDCB-2 are both available from stock in 8-lead 2mm x 3mm DFN packages. 1,000-piece pricing starts at $2.50 each.

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

Summary of Features: LTC3539/-2

- Delivers 3.3V at 900mA from Dual Alkaline/NiMH Cells
- Delivers 5V at 900mA from a Lithium-Polymer Battery
- V_{IN} Start-Up Voltage: 700mV
- 1.5V to 5.25V V_{OUT} Range
- Up to 94% Efficiency
- $V_{IN} > V_{OUT}$ Operation
- 1MHz (LTC3539) or 2MHz (LTC3539-2) Fixed Frequency Operation
- Output Disconnect
- Selectable Burst Mode® or PWM Operation
- 10uA Quiescent Current
- Logic Controlled Shutdown: <1uA
- Requires Only 6 External Components
- Low Profile 8 Lead (2mm × 3mm × 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, 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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