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1.5A, 1.5MHz Synchronous Boost Regulator with Automatic Fault Detection for USB On-The-Go Applications

MILPITAS, CA – March 11, 2009 – Linear Technology Corporation announces the LTC3529, a 1.5MHz, current mode synchronous boost DC/DC converter with automatic overload fault detection. The device's USB OTG - specific protection circuit includes a fault flag that can be programmed to either latchoff or restart after a timeout duration when the bus is overloaded. The LTC3529's internal 1.5A switches can deliver up to 500mA of output current to a fixed 5V output from a single-cell Li-Ion battery. An input voltage range of 1.8V to 5.25V makes the LTC3529 ideal for Li-Ion/Polymer or multicell alkaline/NiCd/NiMH applications. Synchronous rectification enables efficiencies of up to 95%, providing extended battery run-time in handheld applications. The combination of a 2mm x 3mm DFN-8 package and a constant switching frequency of 1.5MHz minimize both inductor and capacitor sizes, providing a tiny solution footprint required in handheld applications.

The LTC3529 uses internal switches with an $R_{DS(ON)}$ of only 90mOhm (N-channel) and 120mOhm (P-channel) to deliver efficiencies as high as 95%. The output disconnect feature allows the output to be completely disconnected in shutdown and also limits the inrush of current during start-up, minimizing surge currents seen by the input supply. The LTC3529 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.

LTC3529EDCB is available from stock in an 8-lead DFN package. 1,000-piece pricing starts at \$2.05 each. For more information, visit www.linear.com.


Photo Caption: 1.5A, 1.5MHz Synchronous Boost Regulator Offers Output Disconnect & Automatic Fault Protection

Summary of Features: LTC3529

- Compact Solution for 5V USB On-The-Go VBUS Power
- 5V at 500mA from Single Li-Ion Cell
- Automatic Fault Detection
- High Efficiency: Up to 95%
- V_{IN} Range: 1.8V to 5.25V
- Fixed 5V Output
- Short Circuit Protection
- 1.5MHz Low Noise, Fixed Frequency PWM
- Inrush Current Limiting & Internal Soft-Start
- Output Disconnect
- <1uA Quiescent Current in Shutdown
- $V_{IN} > V_{OUT}$ Operation
- 8-Lead, 2mm x 3mm 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.

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