4 MHz Synchronous Step-Down DC/DC Converter Delivers Up to 1.8A from a 3mm x 3mm DFN

MILPITAS, CA – June 14, 2007 – Linear Technology announces the LTC3568, a high efficiency, 4MHz, synchronous buck regulator that delivers up to 1.8A of continuous output current from a 3mm x 3mm DFN package. Using a constant frequency and current mode architecture, the LTC3568 operates from an input voltage range of 2.5V to 5.5V, making it ideal for Li-Ion/Polymer battery inputs as well as 3.3V or 5V inputs for point-of-load applications. It can generate output voltages as low as 0.8V, enabling it to power the latest generation of low voltage DSPs and microcontrollers. Its switching frequency is programmable from 850kHz to 4MHz, enabling use with tiny, low cost ceramic capacitors and inductors less than a 1mm in height, providing a highly compact solution footprint.

The LTC3568 uses internal switches with an $R_{DS(ON)}$ of only 0.11Ohm (N-Channel and P-Channel) to deliver efficiencies as high as 96%. It also utilizes low dropout 100% duty cycle operation to allow output voltages equal to V_{IN}, further extending battery run-time. The LTC3568 utilizes Burst Mode® operation to offer only 60uA of no load quiescent current. If the application is noise sensitive, the Burst Mode operation can be replaced with a lower noise pulse-skipping mode. In both modes, the device maintains a shutdown current less than 1uA. To reduce noise even further, the LTC3568's switching frequency is also synchronizable to an external clock between 400kHz and 4MHz. Other features include $\pm$ 2% output voltage accuracy, short-circuit protection, internal soft-start and over-temperature protection.

The LTC3568EDD is available in a 3mm x 3mm DFN-6 package and is available from stock. Pricing starts at $2.95 each for both parts in 1,000-piece quantities.

Photo Caption: 1.8A, 4MHz Synchronous DC/DC Converter

Summary of Features: LTC3568

- High Frequency Operation: Up to 4MHz
- High Efficiency: Up to 96%
- V_{IN} Range: 2.5V to 5.5V
- Output Voltages from 0.8V to 5V
- Low Quiescent Current: 60uA, Shutdown Current: IQ ≤ 1uA
- Current Mode Operation for Excellent Line and Load Transient Response
- Short-Circuit Protected
- Low Dropout Operation: 100% Duty Cycle
- Low RDS(ON) Internal Switches: 0.110Ohm
- Selectable Burst Mode Operation
- Stable with Ceramic Capacitors
- Sychronizable to External Clock
- Tiny 3mm × 3mm, 10-Lead 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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