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2.25MHz Synchronous Step-Down DC/DC Converter with Programmable Input Current Limit Delivers up to 800mA

MILPITAS, CA – October 29, 2009 – Linear Technology announces the LTC3606B, a 2.25MHz, synchronous buck regulator with programmable average input current limit. It can deliver up to 800mA of continuous output current with efficiencies as high as 96%. Using a constant frequency and current mode architecture, the LTC3606B operates from an input voltage range of 2.5V to 5.5V, making it ideal for single-cell Li-Ion and USB applications. It can generate output voltages as low as 0.6V, enabling it to power the latest generation of low voltage DSPs and microcontrollers. The LTC3606B uses a switching frequency of 2.25MHz, allowing the use of tiny, low cost ceramic capacitors and inductors less than 1 mm in height. The combination of high switching frequency, tiny externals and a 3mm x 3mm DFN package make the LTC3606B a highly compact synchronous step-down solution.

The LTC3606B offers a programmable average input current limit that can be programmed between 200mA and 800mA, with $\pm 5\%$ accuracy via a single resistor. This makes the LTC3606B ideal for USB applications, supercapacitor charging and point-of-load power supplies. Combined with a supercapacitor, the LTC3606B enables its output to deliver high peak load currents of up to 2A without collapsing the input supply for applications such as GSM amplifiers. It also utilizes low dropout 100% duty cycle operation to allow output voltages equal to V_{IN} , further extending battery run time. The LTC3606B uses a pulse skipping mode to optimize light load efficiency while minimizing switching interference in applications that require the lowest possible noise. Other features include independent soft-start and power good indication, short-circuit protection and internal compensation. The LTC3606B is an ideal solution for handheld applications, which require input current limiting, outputs of up to 800mA, high efficiency and a very small solution footprint.

The LTC3606BEDD is available from stock in a 3mm x 3mm DFN-8. Pricing starts at \$2.10 each for 1,000-piece quantities. An industrial grade version, the LTC3606BIDD, is tested and guaranteed to operate over a -40°C to 125°C operating junction temperature range and is

priced at \$2.47 each in 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com.


Photo Caption: 800mA Synchronous Step-Down DC/DC Converter with Input Current Limit

Summary of Features: LTC3606B

- Programmable Average Input Current Limit: $\pm 5\%$ Accuracy
- Up to 96% Efficiency
- Very Low Noise Operation
- Input Voltage Range: 2.5V to 5.5V
- Output Voltage Range: 0.6V to 5V
- 2.25MHz Constant-Frequency Operation
- Power Good Output Voltage Monitor
- Low Dropout Operation: 100% Duty Cycle
- Internal Soft-Start
- Current Mode Operation for Excellent Line & Load Transient Response
- $\pm 2\%$ Output Voltage Accuracy
- Short-Circuit Protected
- Shutdown Current $\leq 1\mu\text{A}$
- Available in Small 3mm \times 3mm DFN 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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