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Synchronous Step-Down DC/DC Converter Delivers up to 800mA from a ThinSOT

MILPITAS, CA – January 10, 2007 – Linear Technology announces the LTC3560, a high efficiency, 2.25 MHz, synchronous buck regulator that delivers up to 800mA of continuous output current from a ThinSOT package. Using a constant frequency and current mode architecture, the LTC3560 operates from an input voltage range of 2.5V to 5.5V, making it ideal for single cell Li-Ion, or multi-cell alkaline/NiCad/NiMH applications. It can generate output voltages as low as 0.6V, enabling it to power the latest generation of low voltage DSPs and micro controllers. Its 2.25MHz switching frequency enables the use of tiny, low cost ceramic capacitors and inductors less than 1mm in height, providing a very compact solution footprint for handheld applications.

The LTC3560 uses internal switches with an $R_{DS(ON)}$ of only 0.21 Ω (N-Channel) and 0.23 Ω (P-Channel) to deliver efficiencies as high as 95%. It also utilizes low dropout 100% duty cycle operation to allow output voltages equal to V_{IN} , further extending battery run-time. The LTC3560 utilizes Low Ripple (<20mV_{PK-PK}) Burst Mode[®] operation to offer only 16 μ A no load quiescent current. If the application is noise sensitive the Burst Mode function can be disabled, using a lower noise pulse-skipping mode which still offers only 200 μ A of quiescent current. In either mode, it maintains a shutdown current of less than 1 μ A, further maximizing battery run time. The LTC3560 can also be synchronized to an external clock. Other features include $\pm 2\%$ output voltage accuracy and over-temperature protection.

The LTC3560ES6 is available from stock in a 6-lead ThinSOT[™] package. Pricing starts at \$1.90 each in 1000-piece quantities.


Photo Caption: Synchronous Step-Down Delivers 800mA from a ThinSOT

Summary of Features: LTC3560

- High Efficiency: Up to 95%
- Low Output Ripple (<20mV_{P-P}; Burst Mode® Operation: I_Q = 16μA)
- 2.5V to 5.5V Input Voltage Range
- 2.25MHz Constant Frequency Operation
- Synchronizable to External Clock
- No Schottky Diode Required
- Stable with Ceramic Capacitors
- Low Dropout Operation: 100% Duty Cycle
- 0.6V Reference Allows Low Output Voltages
- Shutdown Mode Draws <1μA Supply Current
- ±2% Output Voltage Accuracy
- Current Mode Operation for Excellent Line and Load Transient Response
- Overtemperature Protected
- Low Profile (1mm) ThinSOT™ 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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