



## **Synchronous Step-Down DC/DC Converter Delivers up to 600mA with Spread Spectrum or PLL Operation**

MILPITAS, CA – January 17, 2007 – Linear Technology announces the LTC3543, a high efficiency, 2.25 MHz, synchronous buck regulator that can deliver up to 600mA of continuous output current from a 2mm x 3mm DFN package. The LTC3543 can run in either a constant 2.25MHz frequency, spread spectrum or synchronized phase lock loop (PLL) mode, offering multiple choices for very low noise operation. Its current mode architecture 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 microcontrollers. Its 2.25MHz switching frequency enables the utilization of tiny, low cost ceramic capacitors and inductors less than 1mm in height, providing a very compact solution footprint for handheld applications.

The LTC3543 uses internal switches with an  $R_{DS(ON)}$  of only 0.35Ohm (N-Channel) and 0.45Ohm (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. For maximum light load efficiency, the LTC3543 utilizes an automatic Low Ripple ( $<20mV_{PK-PK}$ ) Burst Mode<sup>®</sup> operation with only 45uA no load quiescent current. If the application is noise sensitive, the Burst Mode operation can be replaced with a lower noise pulse-skipping, spread spectrum or PLL (to an external clock between 1MHz and 3MHz) mode. In all modes, the device maintains shutdown currents of less than 1uA, maximizing battery run-time. Other features include  $\pm 2\%$  output voltage accuracy, internal soft-start and over-temperature protection.

The LTC3543EDCB is available in a 2mm x 3mm DFN-6 package and is available from stock. Pricing starts at \$1.95 each for both parts in 1,000-piece quantities.

**Photo Caption: 60V Synchronous Step-Down Controller**

**Summary of Features: LTC3543**

- 600mA Output Current
- 2.5V to 5.5V Input Voltage Range
- 2.25MHz Constant Frequency Operation, Spread Spectrum or Synchronized PLL (1MHz to 3MHz)
- High Efficiency: Up to 95%
- Very Low Quiescent Current Low Ripple During Burst Mode Operation ( $<20\text{mV}_{\text{PK-PK}}$ ) :  $I_{\text{Q}}=45\mu\text{A}$
- Low Dropout Operation: 100% Duty Cycle
- Overtemperature Protected
- Stable with Ceramic Capacitors
- Shutdown Mode Draws  $<1\mu\text{A}$  Supply Current
- $\pm 2\%$  Output Voltage Accuracy
- Current Mode Operation for Excellent Line & Load Transient Response
- Available in a Low Profile (0.75mm) 2mm x 3mm 6-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](http://www.linear.com)

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