Low V_{IN} Synchronous Step-Down DC/DC Converter Delivers up to 250mA from a 2mm x 3mm DFN

MILPITAS, CA – August 15, 2006 – Linear Technology Corporation announces the LTC3549, a high efficiency, 2.25MHz, synchronous buck regulator that can deliver up to 250mA of continuous output current from input voltages as low as 1.6V. Using a constant frequency and current mode architecture, the LTC3549 operates from an input voltage range of 1.6V to 5.5V, making it ideal for single cell Li-Ion, or dual-cell alkaline/NiCad/NiMH applications. It can generate output voltages as low as 0.61V, 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 highly compact solution footprint for handheld applications.

The LTC3549 uses internal switches with an $R_{DS(ON)}$ of only 0.4 Ohm (N-Channel) and 0.56 Ohm (P-Channel) to deliver efficiencies as high as 93%. It also utilizes low dropout 100% duty cycle operation to allow output voltages equal to V_{IN}, further extending battery run-time. The LTC3549 utilizes low ripple Burst Mode® operation to provide only 50uA no load quiescent current with less than $20mV_{PK-PK}$ of output ripple. If the application is noise sensitive, the LTC3549 can be set in an even lower noise pulse-skipping mode, yet still offers only 300uA of quiescent current. Both parts maintain shutdown current of less than 1uA, further maximizing battery life. The LTC3549 is stable with ceramic capacitors, achieving very low output voltage ripple. Other features include current mode operation for excellent line and load transient response, internal soft-start and over-temperature protection.

The LTC3549EDCB is available from stock in 6-lead 2mm x 3mm DFN Packages. Pricing starts at $1.35 each 1,000-piece quantities.

Photo Caption: Low V_{IN} Buck Regulator in 2mm x 3mm DFN

Summary of Features: LTC3549

- 1.6V to 5.5V Input Voltage Range
- Internal Soft-Start
- Low Burst Mode Output Voltage Ripple
- 2.25MHz Constant-Frequency Operation
- High Efficiency: up to 93%
- Very Low Quiescent Current: 50uA
- Low Dropout Operation: 100% Duty Cycle
- 0.611V Reference Voltage
- Stable with Ceramic Capacitors
- Shutdown Mode Draws <1uA Supply Current
- Current Mode Operation for Excellent Line & Load Transient Response
- Overtemperature Protection
- Available in a Low Profile (0.75mm) 6-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, 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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