



15V, 4MHz, Synchronous Step-Down Regulator Delivers 1.5A from a 3mm x 3mm QFN

MILPITAS, CA – August 12, 2009 – The LTC3601 is a high efficiency, 4MHz synchronous buck regulator from Linear Technology that incorporates a controlled frequency, current mode architecture. It can deliver up to 1.5A of continuous output current at output voltages as low as 0.6V from a 3mm x 3mm QFN or a thermally enhanced MSOP-16 package. The LTC3601 operates from an input voltage of 4V to 15V, making it ideal for dual-cell Li-Ion applications as well as 12V intermediate bus systems. Its switching frequency is user programmable from 800kHz to 4MHz, enabling the use of tiny, low cost capacitors and inductors.

The LTC3601 uses internal switches with $R_{DS(ON)}$ of only 100mOhms and 130mOhms to deliver efficiencies as high as 96%. Its unique control architecture enables it to achieve duty cycles as low as 5% while maintaining switching frequencies as high as 2.25MHz making it ideal for high step down ratio applications, such as 12V_{IN} to 1.2V_{OUT} conversions. Burst Mode[®] operation is used to maximize light load efficiency requiring only 300uA at no load, making it well suited for applications demanding maximum battery run time. For applications that require the lowest possible noise, the LTC3601 can be configured to run in forced continuous mode, reducing noise and potential RF interference. Additional features include a Power Good voltage monitor, external synchronization capability and thermal protection.

The LTC3601EUD is available in a 3mm x 3mm QFN-16, and the LTC3601MSE is offered in a 16-lead, thermally enhanced MSOP package. Pricing for both package options starts at \$2.30 each in 1,000-piece quantities. Industrial grade versions, the LTC3601IUD and LTC3601IMSE, are guaranteed to operate over the -40°C to 125°C operating junction temperature range and are priced at \$2.71 each in 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com.


Photo Caption: 15V, 1.5A, 4MHz Monolithic Synchronous Step-Down Regulator

Summary of Features: LTC3601

- 4V to 15V Input Voltage Range
- 1.5A Output Current
- Up to 96% Efficiency
- Very Low Duty Cycle Operation: 5% at 2.25MHz
- Adjustable Switching Frequency: 800kHz to 4MHz
- External Frequency Synchronization
- Current Mode Operation for Excellent Line and Load Transient Response
- User Selectable Burst Mode[®] (No Load $I_Q = 300\mu A$) or Forced Continuous Operation
- 0.6V Reference Allows Low Output Voltages
- Short-Circuit Protected
- Output Voltage Tracking Capability
- Programmable Soft-Start
- Power Good Status Output
- Available in Small, Thermally Enhanced, 16-Pin QFN (3mm x 3mm) & MSOP 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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