



3A, 4MHz, Synchronous Step-Down Regulator in 3mm x 4mm QFN

MILPITAS, CA – September 1, 2009 – The LTC3612 is a high efficiency, 4MHz synchronous buck regulator from Linear Technology that incorporates a constant frequency, current mode architecture. It can deliver up to 3A of continuous output current at output voltages as low as 0.6V from a 3mm x 4mm QFN or a thermally enhanced TSSOP-20 package. The LTC3612 operates from an input voltage of 2.25V to 5.5V, making it ideal for single cell Li-Ion applications as well as 3.3V or 5V intermediate bus systems. Its switching frequency is user programmable from 300kHz to 4MHz, enabling the use of tiny, low cost capacitors and inductors.

The LTC3612 uses internal switches with $R_{DS(ON)}$ of only 45mOhms and 70mOhms to deliver efficiencies of over 90% for high step-down ratio applications, such as 5V_{IN} to 1.8V_{OUT} conversions. Burst Mode[®] operation is used to maximize light load efficiency, requiring only 70uA at no load, making it well suited for applications demanding maximum battery run time. An adjustable Burst Mode clamp enables designers to further optimize light load efficiency. For applications that require the lowest possible noise, the LTC3612 can be configured to run in either pulse-skipping or forced continuous modes, reducing noise and potential RF interference. The LTC3612 also offers inputs for tracking capability as well as a DDR memory mode which can source/sink $\pm 1.5A$. Additional features include optional active voltage positioning, a Power Good voltage monitor, external synchronization capability and thermal protection.

The LTC3612EUDC is available in a 3mm x 4mm QFN-20, and the LTC3612EFE is offered in a 20-lead, thermally enhanced TSSOP package. Pricing starts at \$3.10 and \$3.25 each, respectively in 1,000-piece quantities. Industrial grade versions, the LTC3612IUDC and LTC3612IFE, are guaranteed to meet specifications over the -40°C to 125°C operating junction temperature range and are priced at \$3.65 and \$3.82 each, respectively in 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com.


Photo Caption: 3A, 4MHz Synchronous Step-Down DC/DC Converter in 3mm x 4mm QFN

Summary of Features: LTC3612

- 3A Output Current
- 2.25V to 5.5V Input Voltage Range
- Low Output Ripple Burst Mode[®] Operation: $I_Q = 70\mu A$
- $\pm 1\%$ Output Voltage Accuracy
- Output Voltage Down to 0.6V
- High Efficiency: Up to 95%
- Low Dropout Operation: 100% Duty Cycle
- Shutdown Current: $\leq 1\mu A$
- Adjustable Switching Frequency: Up to 4MHz
- Optional Active Voltage Positioning (AVP) with Internal Compensation
- Selectable Pulse-Skipping/Forced Continuous/Burst Mode Operation with Adjustable Burst Clamp
- Programmable Soft-Start
- Inputs for Start-Up Tracking or External Reference
- DDR Memory Mode, $I_{OUT} = \pm 1.5A$
- Available in 20-Lead (3mm \times 4mm) QFN & 20-Lead TSSOP Thermally Enhanced 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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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937