



## **42V Synchronous Step-Down Delivers 6A from a 3mm x 6mm QFN & Requires Only 3 $\mu$ A of Quiescent Current**

MILPITAS, CA – February 3, 2014 – Linear Technology Corporation announces the [LT8612](#), a 6A, 42V input capable synchronous step-down switching regulator. Synchronous rectification delivers efficiency as high as 95% while Burst Mode<sup>®</sup> operation keeps quiescent current under 3 $\mu$ A in no-load standby conditions. Its 3.4V to 42V input voltage range makes it ideal for automotive and industrial applications. Its internal high efficiency switches deliver up to 6A of continuous output current to voltages as low as 0.97V. The LT8612's Burst Mode operation offers ultralow quiescent current, making it well suited for applications such as automotive “always-on” systems, which need to extend operating battery life. The LT8612's unique design maintains a minimum dropout voltage of only 250mV at 3A under all conditions, enabling it to excel in scenarios such as automotive cold-crank. Furthermore, a fast minimum on-time of only 40ns enables 2MHz constant frequency switching from a 16V input to a 1.5V output. This enables designers to optimize efficiency while avoiding critical noise-sensitive frequency bands. The LT8612's 28-lead 3mm x 6mm QFN package and high switching frequency keep external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT8612 utilizes internal top and bottom high efficiency power switches with the necessary boost diode, oscillator, control and logic circuitry integrated into a single die. Low ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 10mV<sub>PK-PK</sub>. Special design techniques and a new high speed process enable high efficiency over a wide input voltage range, and the LT8612's current-mode topology

enables fast transient response and excellent loop stability. Other features include internal compensation, a power good flag, output soft start/tracking and thermal protection.

The LT8612EUDE is packaged in a 3mm x 6mm QFN package and is priced starting at \$4.95 each. An industrial temperature version, the LT8612IUDE, is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at starting \$5.45 each. All pricing is for 1,000 piece quantities and all versions are available from stock. For more information, visit [www.linear.com/product/LT8612](http://www.linear.com/product/LT8612)

**Photo Caption:** 42V, 6A ( $I_{OUT}$ ), 2.2MHz Synchronous Step-Down with Only 3 $\mu$ A of Quiescent Current

### Summary of Features: LT8612

- Wide Input Voltage Range: 3.4V to 42V
- Ultralow Quiescent Current Burst Mode<sup>®</sup> Operation: 3 $\mu$ A  $I_Q$  Regulating 12V<sub>IN</sub> to 3.3V<sub>OUT</sub>
- Output Ripple < 10mV<sub>P-P</sub>
- High Efficiency Synchronous Operation:
  - o 95% Efficiency at 3A, 5V<sub>OUT</sub> from 12V<sub>IN</sub>
  - o 94% Efficiency at 3A, 3.3V<sub>OUT</sub> from 12V<sub>IN</sub>
- Fast Minimum Switch-On Time: 40ns
- Low Dropout Under All Conditions: 250mV at 3A
- Allows Use Of Small Inductors
- Safely Tolerates Inductor Saturation in Overload Conditions
- Adjustable & Synchronizable: 200kHz to 2.2MHz
- Current Mode Operation
- Accurate 1V Enable Pin Threshold
- Internal Compensation
- Output Soft-Start & Tracking
- Small Thermally Enhanced 3mm x 6mm 28-Lead QFN Package

## About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, µModule<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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