



## **58V<sub>IN</sub>, 2A with I<sub>OUT</sub>, 2.4MHz Step-Down DC/DC Converter Draws Only 85uA of Quiescent Current & Withstands 80V Transients**

MILPITAS, CA – September 28, 2009 – Linear Technology Corporation announces the LT3980, a 2A, 58V<sub>IN</sub> step-down switching regulator with Burst Mode<sup>®</sup> operation to maintain quiescent current under 85uA. The LT3980 operates within a V<sub>IN</sub> range of 3.6V to 58V, with overvoltage lockout protection against transients as high as 80V, making the device ideal for load dump and cold-crank conditions commonly found in automotive applications. Its internal 3.4A switch can deliver up to 2A of continuous output current at voltages as low as 0.79V. The LT3980's Burst Mode operation provides ultralow quiescent current, well suited for applications such as automotive or telecom systems, which have always-on circuits and demand optimal battery life. Switching frequency is user programmable from 100kHz to 2.4MHz, enabling the designer to maximize efficiency while avoiding critical noise-sensitive frequency bands. The combination of a 3mm x 4mm DFN-16 package (or thermally enhanced MSOP-16E) and high switching frequency keeps the LT3980's external inductor and capacitors small, providing a compact, thermally efficient footprint.

The LT3980 utilizes a high efficiency 3.4A, 200mOhm switch, with the necessary boost diode, oscillator, control and logic circuitry integrated into a single chip. Its catch diode current sense (DA pin) protects the circuit during input voltage transients even at high switching frequencies. Low ripple Burst Mode<sup>®</sup> operation maintains high efficiency at low output currents while keeping output ripple below 15mV<sub>PK-PK</sub>. Special design techniques used in the LT3980

enable high efficiency over a wide input voltage range, and the device's current mode topology enables fast transient response and excellent loop stability. Other features include external synchronization (from 250kHz to 2MHz), a power good flag and soft-start capability.

Pricing for the LT3980EDE and LT3980EMSE starts at \$3.55 each, for 1,000-piece quantities. The LT3980IDE and LT3980IMSE are guaranteed to operate from a -40°C to 125°C operating junction temperature, priced at \$4.18 each, in 1,000-piece quantities. The LT3980HMSE is guaranteed to operate from a -40°C to 150°C operating junction temperature and is priced at \$4.43 in 1,000 piece quantities. All versions are available from stock. For more information, visit [www.linear.com](http://www.linear.com).

**Photo Caption:** 58V with 80V Transient Protection, 2A (I<sub>OUT</sub>), 2.4MHz Step-Down Switching Regulator with I<sub>Q</sub><85uA in 3mm x 4mm DFN (or MSOP-16E)

### Summary of Features: LT3980

- Wide Input Range: Operation from 3.6V to 58V
- Overvoltage Lockout Protects Circuits Through 80V Transients
- 2A Maximum Output Current
- Low Ripple (<15mVP-P) Burst Mode<sup>®</sup> Operation:
- I<sub>Q</sub> = 85uA at 12V<sub>IN</sub> to 3.3V<sub>OUT</sub>
- Adjustable Switching Frequency: 100kHz to 2.4MHz
- Low Shutdown Current: I<sub>Q</sub> < 1uA
- Catch Diode Current Sense Protects Circuit Through Short-Circuit & Input Overvoltage
- Synchronizable Between 250kHz to 2MHz
- Power Good Flag
- Saturating Switch Design: 200mOhm On-Resistance
- Thermal Protection
- Soft-Start Capability
- Small 16-Pin Thermally Enhanced MSOP & 3mm x 4mm DFN 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<sup>®</sup> 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](mailto:jhamburger@linear.com)  
Tel 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager  
[ddickinson@linear.com](mailto:ddickinson@linear.com)  
408-432-1900 ext 2233

#### UK & Nordic

Alan Timmins  
[alan@ezwire.com](mailto:alan@ezwire.com)  
Tel: +44-1-252-629937