



36V, 3.5A(I_{OUT}), 2.4MHz Step-Down DC/DC Converter Draws Quiescent Current of Only 75uA

MILPITAS, CA – August 14, 2007 – Linear Technology Corporation announces the LT3680, a 3.5A, 36V step-down switching regulator with Burst Mode[®] operation to keep quiescent current under 75uA. The LT3680 operates within a V_{IN} range of 3.6V to 36V, making it ideal for load dump and cold-crank conditions found in automotive applications. Its 4.6A internal switch can deliver up to 3.5A of continuous output current to voltages as low as 0.79V. The LT3680's Burst Mode operation offers ultra-low quiescent current, well suited for applications such as automotive or telecom systems, which demand always-on operation and optimum battery life. Switching frequency is user programmable from 250kHz to 2.4MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. Its 3mm x 3mm DFN-10 package (or thermally enhanced MSOP-10E) and high switching frequency keep external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT3680 utilizes a high efficiency 4.6A, 95mOhm switch, with the necessary boost diode, oscillator, control and logic circuitry integrated into a single chip. Low ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 15mV_{PK-PK}. Special design techniques used in the LT3680 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 LT3680EDD and LT3680EMSE starts at \$4.15 and \$4.25 each, respectively for 1,000-piece quantities. The LT3680IDD and LT3680IMSE are tested and guaranteed to operate from a -40°C to 125°C operating junction temperature, priced at \$4.98 and \$5.10 each, respectively in 1,000-piece quantities. All versions are available from stock.

Photo Caption: 36V, 3.5A Step Down with Only 75uA Quiescent Current

Summary of Features: LT3680

- Wide Input Range: 3.6V to 36V
- 3.5A Maximum Output Current
- Low Ripple (<15mVP-P) Burst Mode Operation: $I_Q = 75\mu A$ at $12V_{IN}$ to $3.3V_{OUT}$
- Adjustable Switching Frequency: 200kHz to 2.4MHz
- Low Shutdown Current: $I_Q < 1\mu A$
- Integrated Boost Diode
- Synchronizable Between 250kHz to 2MHz
- Power Good Flag
- Saturating Switch Design: 95m Ohm On-Resistance
- 0.790V Feedback Reference Voltage
- Output Voltage: 0.79V to 30V
- Thermal Protection
- Soft-Start Capability
- Small 10-Pin Thermally Enhanced MSOP & (3mm 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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