

## **36V, 2A( $I_{OUT}$ ), 2.8MHz Step-Down DC/DC Converter with Integrated Boost & Schottky Diode Offers Quiescent Current of Only 50uA**

MILPITAS, CA – June 20, 2007 – Linear Technology Corporation announces the LT3681, a 2A, 36V step-down switching regulator with Burst Mode® operation to keep quiescent current under 50uA. The LT3681 operates within a  $V_{IN}$  range of 3.6V to 34V with transient protection to 36V, making it ideal for load dump and cold-crank conditions found in automotive applications. Its 3.2A internal switch can deliver up to 2A of continuous output current to voltages as low as 1.26V. Its integrated Schottky and boost diodes offer a very compact solution footprint required in automotive and telecom applications. The LT3681'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 300kHz to 2.8MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. The combination of its 3mm x 4mm DFN-10 package, integrated diodes and high switching frequency keeps external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT3681 utilizes a high efficiency 3.2A, 360mV<sub>CESAT</sub> switch, with the necessary boost diode, Schottky diode, oscillator, control and logic circuitry integrated into a DFN package. Low ripple Burst Mode operation maintains high efficiency at low output currents while keeping output ripple below 15mV<sub>PK-PK</sub>.

Special design techniques enable high efficiency over a wide input voltage range and the devices's current mode topology ensures fast transient response and excellent loop stability. The LT3681 also includes a power good flag and soft-start capability.

Pricing for the LT3681EDE starts at \$3.65 each, for 1,000-piece quantities and the device is available from stock.

**Photo Caption:** 36V, 2A ( $I_{OUT}$ ), 2.8MHz Step-Down Switching Regulator with  $I_Q < 50\mu A$  & Integrated Diodes in 3mm x 4mm DFN

### Summary of Features: LT3681

- Wide Input Voltage Range: 3.6V to 34V Operating, 36V Maximum
- 2A Maximum Output Current
- Low Ripple ( $< 15mV_{PK-PK}$  Output Ripple) Burst Mode Operation :  $I_Q < 50\mu A$  at  $12V_{IN}$  to  $3.3V_{OUT}$
- Adjustable Switching Frequency: 300kHz to 2.8MHz
- Low Shutdown Current:  $I_Q < 1\mu A$
- Integrated Boost Diode
- Integrated Power Schottky Diode
- Power Good Flag
- Saturating Switch Design: 0.18  $\Omega$  On-Resistance
- 1.265V Feedback Reference Voltage
- Output Voltage: 1.265V to 20V
- Soft-Start Capability
- Small 14-Pin Thermally Enhanced (3mm x 4mm) 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](http://www.linear.com)

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