



38V, 1.2A (I_{OUT}), 2MHz Step-Down DC/DC Converter at Only 2.8uA Quiescent Current

MILPITAS, CA – November 16, 2009 – Linear Technology Corporation announces the LT3971, a 1.2A, 38V step-down switching regulator with an integrated boost diode. Its Burst Mode[®] operation keeps quiescent current under 2.8uA in no load standby conditions. The LT3971's 4.3V to 38V input voltage range makes it ideal for automotive and industrial applications. Its internal 2.4A switch can deliver up to 1.2A of continuous output current to voltages as low as 1.19V. The LT3971's Burst Mode operation offers ultralow quiescent current, making it well suited for applications such as automotive or industrial systems, which demand always-on operation and optimum battery life. Switching frequency is user programmable from 200kHz to 2MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. The combination of its 10-lead 3mm x 3mm DFN-10 (or thermally enhanced MSOP) package and high switching frequency keeps external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT3971 utilizes a high efficiency 2.4A, 330mOhm switch, 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 15mV_{PK-PK}. Special design techniques and a new high voltage process enable high efficiency over a wide input voltage range, and the LT3971's current mode topology enables fast transient response and excellent loop stability. Other features include a power good flag, soft-start capability, external clock synchronization and internal compensation.

The LT3971EDD is packaged in a 3mm x 3mm DFN-10, and the LT3971EMSE is packaged in a thermally enhanced MSOP-10, priced starting at \$2.75 each for 1,000 piece quantities. The LT3971IDD and LT3971IMSE are tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and are priced at \$3.06 each in 1,000 piece quantities. All versions are available from stock. For more information, visit www.linear.com.


Photo Caption: 2.8uA I_Q , 38V Step-Down DC/DC Converter

Summary of Features: LT3971

- Ultralow Quiescent Current: 2.8uA I_Q Regulating 12V_{IN} to 3.3V_{OUT}
- Low Ripple Burst Mode[®] Operation: Output Ripple < 15mV_{P-P}
- Wide Input Voltage Range: 4.3V to 38V
- 1.2A Maximum Output Current
- Adjustable Switching Frequency: 200kHz to 2MHz
- Synchronizable Between 250kHz to 2MHz
- Fast Transient Response
- Accurate 1V Enable Pin Threshold
- Low Shutdown Current: $I_Q = 700nA$
- Power Good Flag
- Soft-Start Capability
- Internal Compensation
- Saturating Switch Design: 0.33 Ohm On-Resistance
- Output Voltage: 1.19V to 30V
- Small Thermally Enhanced 10-Pin MSOP Package & (3mm x 3mm) 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[®] 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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