65V, 2.2MHz Synchronous Step-Down Switcher Delivers 2A & Needs Only 2.5µA of I_Q

MILPITAS, CA – May 20, 2014 – Linear Technology Corporation announces the LT8620, a 2A, 65V input capable synchronous step-down switching regulator. Synchronous rectification delivers efficiency as high as 95% while Burst Mode® operation keeps quiescent current under 2.5µA in no-load standby conditions. Its 3.4V to 65V input voltage range makes it ideal for automotive (single and dual battery) and industrial applications. Its internal high efficiency switches can deliver up to 2A of continuous output current to voltages as low as 0.97V. The LT8620'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 LT8620's unique design maintains a minimum dropout voltage of only 250mV at 1A under all conditions, enabling it to excel in scenarios such as automotive cold-crank.

The device's fast minimum on-time of only 30ns enables 2MHz constant frequency switching from a 16V input to a 1.5V output, enabling designers to optimize efficiency while avoiding critical noise-sensitive frequency bands. The LT8620's 24-lead 3mm x 5mm QFN or thermally enhanced MSOP-16E package and a high switching frequency keeps external inductors and capacitors small, providing a compact, thermally efficient footprint.

The LT8620 integrates 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 $10mV_{PK-PK}$. Special design techniques and a new high speed process enable

high efficiency over a wide input voltage range, and the LT8620'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 LT8620EUDD is packaged in a 24-lead, 3mm x 5mm QFN package and the LT8620EMSE is packaged in a thermally enhanced MSOP-16E package. Pricing starts at $3.75 each. Industrial temperature versions are tested and guaranteed to operate from a -40°C to 125°C operating junction temperature. All versions are available from stock. For more information, visit www.linear.com/product/LT8620

Photo Caption: 65V, 2A (I_{OUT}), 2.2MHz Synchronous Step-Down with Only 2.5µA of Quiescent Current

Summary of Features: LT8620

- Wide Input Voltage Range: 3.4V to 65V
- Ultralow Quiescent Current Burst Mode® Operation:
- 2.5µA IQ Regulating $12V_{IN}$ to $3.3V_{OUT}$, Output Ripple < $10mV_{PK-PK}$
- High Efficiency Synchronous Operation:
- 94% Efficiency at 1A, $12V_{IN}$ to $5V_{OUT}$
- 92% Efficiency at 1A, $12V_{IN}$ to $3.3V_{OUT}$
- Fast 30ns Minimum Switch-On Time
- Low Dropout under All Conditions: 250mV at 1A
- Safely Tolerates Inductor Saturation in Overload
- Low EMI
- Adjustable & Synchronizable: 200kHz to 2.2MHz
- Accurate 1V Enable Pin Threshold
- Internal Compensation
- Output Soft-Start &Tracking
- Small Thermally Enhanced 16-Lead MSOP & 3mm × 5mm 24-Lead QFN Packages

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® subsystems, and wireless sensor network products. For more information, visit www.linear.com

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