



## **Ultralow Power Boost Converter with Dual Half-Bridge Switches**

MILPITAS, CA – May 21, 2009 – Linear Technology announces the LT8415, a low noise micropower boost converter with integrated dual half-bridge switches. The LT8415's unique design scheme requires only 10.5uA of quiescent current, which is further reduced to 0uA in shutdown. Integrated high value (12.4M/0.4M) output feedback divider resistors enable the LT8415 to regulate a 16V output with less than 70uA of total input current. Its very small 25mA switch current limit enables it to operate very efficiently from high impedance sources, such as coin cell batteries without any inrush current limitation.

The LT8415's integrated N-channel and P-channel MOSFETs in each half-bridge are synchronously controlled by a single input pin, and never turn on at the same time maximizing system reliability for applications such as MEMs relays. The internal MOSFETs are sized to drive capacitive loads ranging from a few pF to several nF without issue. The LT8415 integrates the main switch, half-bridge switches, Schottky diodes and output disconnect on a single die, packaged in a 2mm x 3mm DFN. The LT8415's wide 2.5V to 16V input voltage range enables it to operate from single-cell Li-Ion batteries up to fixed 12V input rails, delivering outputs up to 40V. The output voltage can be adjusted dynamically by driving the FBP pin with an external voltage source. The LT8415 can deliver over 700uA of average output current at 34V from a single Li-Ion cell making it ideal for applications such as MEMs relays or biasing power. Both parts use a unique control technique that delivers efficiencies as high as 88% and low output ripple ( $<10\text{mV}_{\text{PK-PK}}$ ) over a wide load current range. Other features include integrated soft-start and overvoltage protection. The combination of the LT8415's 2mm x 3mm DFN package and tiny, low cost ceramic capacitors and inductors provides a very compact solution footprint.


The LT8415EDDB is available from stock in a 12-lead 2mm x 3mm DFN package. Pricing starts at \$2.40 each for 1,000-piece quantities. An industrial temperature version, the LT8415IDDB is also available from stock in a 12-lead 2mm x 3mm DFN package. Pricing starts at \$2.76 each for 1,000-piece quantities. For more information, visit [www.linear.com](http://www.linear.com).

**Photo Caption:** Micropower Low Noise Boost Converter with Dual Half-Bridge Switches**Summary of Features: LT8415**

- High Voltage Switches Built in (Dual Half-Bridge)
- Ultralow Quiescent Current : 10.5uA in Active Mode, 0uA in Shutdown Mode
- Comparator Built into SHDN Pin
- Low Noise Control Scheme
- Adjustable FB Reference Voltage
- Wide Input Range: 2.5V to 16V
- Wide Output Range: Up to 40V
- Integrated Power NPN Switch (25mA Current Limit)
- Integrated Schottky Diode
- Integrated Output Disconnect
- High Value (12.4M/0.4M) Feedback Resistor Integrated
- Built in Soft-Start (Optional Capacitor from  $V_{REF}$  to GND)
- Overvoltage Protection for CAP,  $V_{OUT}$ , OUT1 and OUT2 Pins
- 12-Pin 2mm 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, 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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**Press Contacts:**

John Hamburger, Director Marketing Communications  
[jhamburger@linear.com](mailto:jhamburger@linear.com)  
408-432-1900 ext 2419

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