



## **40V<sub>IN/OUT</sub>, 1A Synchronous Buck-Boost DC/DC Converter Offers 2.7V to 40V Input & Output Range**

MILPITAS, CA – April 29, 2014 – The [LTC3114-1](#) is a synchronous, current-mode buck-boost converter that delivers up to 1A of continuous output current from a wide range of power sources, including single-cell Li-Ion, 24V/28V industrial rails and 40V automotive inputs. The LTC3114-1's 2.2V to 40V input and 2.7V to 40V output range provides a regulated output with inputs above, below or equal to the regulated output, maximizing power source flexibility and extending battery run time over step-down only solutions. The proprietary low noise buck-boost topology incorporated in the LTC3114-1 provides a continuous jitter-free transition between buck and boost modes, making it ideal for RF and other noise-sensitive applications.

The device's selectable Automatic Burst Mode<sup>®</sup> operation lowers quiescent current to only 30μA, improving light load efficiency and further extending battery run time. The LTC3114-1 uses a constant 1.2MHz switching frequency and features pin-programmable average output current and current monitor. Proprietary buck-boost PWM circuitry ensures low noise and high efficiency while minimizing the size of external components. The combination of tiny externals and a 3mm x 5mm DFN or TSSOP-16E package provides a compact solution footprint.

The LTC3114-1 incorporates four internal low  $R_{DS(ON)}$  N-channel MOSFETs to deliver efficiencies of up to 96%. Automatic Burst Mode operation lowers quiescent current to only 30μA, improving light load efficiency and extending battery run time. For noise-sensitive applications, Burst Mode operation can be disabled. Furthermore, current-mode control improves line and load transient responses while keeping compensation simple. Additional features include

internal soft-start and inrush current limit, undervoltage lockout, thermal overload protection, short-circuit protection and output disconnect.

LTC3114EDHC-1 is available in a 16-lead 3mm x 5mm DFN package and the LTC3114EFE-1 is in a thermally enhanced 16-lead TSSOP package. Pricing starts at \$3.95 each for 1,000 piece quantities. Industrial grade versions, the LTC3114IDHC-1 and LTC3114IFE-1, are guaranteed to operate over the -40°C to 125°C operating junction temperature range, priced at \$4.35 and \$4.51 each, respectively, in 1,000-piece quantities. High temperature grade versions, the LTC3114HDHC-1 and LTC3114HFE-1, are guaranteed to operate over the -40°C to 150°C operating junction temperature range, priced at \$4.60 and \$4.76 each, respectively, in 1,000-piece quantities. Finally high reliability versions, the LTC3114MPDHC-1 and LTC3114MPFE-1, are guaranteed to operate over the -55°C to 150°C operating junction temperature range, priced starting at \$11.73 each, in 1,000-piece quantities. All versions are available from stock. For more information, visit [www.linear.com/product/LTC3114](http://www.linear.com/product/LTC3114)


**Photo Caption:** 40V<sub>IN/OUT</sub>, 1A Synchronous Buck-Boost DC/DC Converter

### Summary of Features: LTC3114-1

- Regulates V<sub>OUT</sub> Above, Below or Equal to V<sub>IN</sub>
- Single Inductor
- Wide V<sub>IN</sub> Range: 2.2V to 40V
- Wide V<sub>OUT</sub> Range: 2.7V to 40V
- 1A Output Current in Buck Mode
- 0.5A Output Current, V<sub>IN</sub> = 3.6V, V<sub>OUT</sub> = 5V
- Programmable Average Output Current
- Up to 96% Efficiency
- Burst Mode<sup>®</sup> Operation, 30μA No-Load I<sub>Q</sub>
- Current-Mode Control
- 1.2MHz Ultralow Noise PWM
- Accurate RUN Pin Threshold
- Thermally Enhanced, 16-Lead 3mm × 5mm DFN & TSSOP 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](http://www.linear.com)

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