



25V, 600mA Synchronous Buck-Boost DC/DC Converters Consume Only 1.6 μ A of Quiescent Current

MILPITAS, CA – August 23, 2016 – Linear Technology announces the [LTC3130](#) and [LTC3130-1](#) synchronous current mode buck-boost converters that deliver up to 600mA of continuous output current from a wide variety of input sources, including single- or multiple-cell batteries as well as solar panels and supercapacitors. Their 2.4V to 25V input voltage range and 1V to 25V output range (LTC3130 is adjustable) provide a regulated output with inputs above, below or equal to the output. User selectable Burst Mode[®] operation lowers quiescent current to only 1.6 μ A (1.2 μ A at no load) improving light load efficiency and extending battery run time. The proprietary buck-boost topology incorporated in the LTC3130/-1 provides low noise, jitter-free switching through all operating modes, ideal for RF and precision analog applications that are sensitive to power supply noise. The device also includes programmable maximum power point control (MPPC) capability, ensuring maximum power delivery from nonideal power sources such as photovoltaic cells. The LTC3130-1 shares all of the features of the LTC3130, but offers four user-selectable fixed output voltages: 1.8V, 3.3V, 5V and 12V, eliminating the resistor divider required for the adjustable output version.

The LTC3130/-1 includes four internal low $R_{DS(on)}$ N-channel MOSFETs to deliver efficiencies of up to 95%. Due to its low quiescent current, converter start-up can be achieved from sources as low as 7.5 μ W, making the LTC3130/3130-1 ideal for applications powered by weak sources, including thin film solar cells. Alternatively, Burst Mode operation can be disabled, offering low noise continuous switching. The LTC3130/-1's constant 1.2MHz switching frequency ensures low noise and high efficiency, while minimizing the size of the external components. Built-in loop compensation and soft-start reduce external parts count and simplify design. Other features include a power good indicator, pin-selectable current limit, an accurate RUN pin threshold, an external V_{CC} input and thermal shutdown. The device's combination of tiny externals, wide operating voltage range, compact packaging, plus ultralow quiescent current makes the LTC3130/-1 well suited for always-on applications in which

extended battery run time is of primary importance, such as long life battery-powered instruments, portable military radios, low power sensors and solar panel post-regulator/charger circuits.

The LTC3130 and LTC3130-1 are available in thermally enhanced 20-lead 3mm x 4mm QFN and 16-lead MSOP packages. E- and I-grade devices are specified over the -40°C to 125°C operating temperature range. E-grade pricing starts at \$3.35 each at 1,000 pieces for both packages. All versions are available from stock. For more information, visit www.linear.com/product/LTC3130.

Photo Caption: 25V, 600mA 1.6 μ A I_Q Synchronous Buck-Boost Regulator


Summary of Features: LTC3130 & LTC3130-1

- Regulates V_{OUT} Above, Below or Equal to V_{IN}
- Wide V_{IN} Range: 2.4V to 25V, <1V to 25V (Using $EXTV_{CC}$ Input)
- V_{OUT} Range: 1V to 25V
- Adjustable Output Voltage (LTC3130)
- Fixed Output Voltages (LTC3130-1) with Four User-Selectable Settings
- $I_Q = 1.2\mu\text{A}$ at No Load (Burst Mode[®] Operation Enabled)
- 600mA Output Current in Buck Mode
- Pin-Selectable 850mA/450mA Current Limit (LTC3130)
- Up to 95% Efficiency
- Pin-Selectable Burst Mode Operation
- 1.2MHz Ultralow Noise PWM Frequency
- Programmable Maximum Power Point Control
- Accurate RUN Pin Threshold
- Power Good Indicator
- $I_Q = 500\text{nA}$ in Shutdown
- Thermally Enhanced 20-Lead 3mm \times 4mm QFN & 16-Lead MSOP Packages

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

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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