



2.5A, 15V Synchronous Boost Regulator Offers 95% Efficiency, 3MHz Switching & Output Disconnect in a 3mm x 4mm DFN

MILPITAS, CA – October 18, 2012 – Linear Technology Corporation announces the [LTC3122](#), a 3MHz current-mode, synchronous boost DC/DC converter with integrated output disconnect. Its internal 2.5A switches deliver output voltages as high as 15V from an input voltage range of 1.8V at start-up (0.5V when running) to 5.5V, making it ideal for battery or standard 3.3V and 5V power sources. The LTC3122 can deliver up to 800mA of continuous output current at 12V from a 5V input. Pin-selected Burst Mode[®] operation lowers quiescent current to only 25µA, providing extended battery run time in handheld applications. The combination of its thermally enhanced 3mm x 4mm DFN-12 (or MSOP-12) package and a constant switching frequency of up to 3MHz enables the designer to balance PCB solution size with required efficiency.

The LTC3122 has internal synchronous switches with an $R_{DS(ON)}$ of only 121mOhm (N-channel) and 188mOhm (P-channel) to deliver efficiencies as high as 95%. Output disconnect allows the output voltage to be completely discharged in shutdown and also eliminates large inrush currents during start-up, minimizing stress on the input supply. The LTC3122 also regulates the output voltage when the input voltage exceeds the output voltage, making the device compatible with any battery chemistry. For applications demanding the lowest possible noise operation, the LTC3122 can be set via an external pin to operate in constant PWM mode. Additional features include external synchronization, output overvoltage protection and robust short-circuit protection. The LTC3122 is an ideal solution for boost applications requiring

outputs up to 15V, where high efficiency, small solution size and high reliability are defining factors.

LTC3122EDE and LTC3122EMSE are both available from stock in 12-lead 3mm x 4mm DFN or thermally enhanced MSOP packages, respectively. 1,000-piece pricing starts at \$2.33 each. Industrial-grade versions, the LTC3122IDE and LTC3122IMSE, are guaranteed to operate over the -40°C to 125°C operating junction temperature range and are priced at \$2.73 each in 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com/product/LTC3122.


Photo Caption: Compact, Efficient 2.5A Synchronous Booster Delivers Outputs to 15V

Summary of Features: LTC3122

- V_{IN} Range: 1.8V to 5.5V, 500mV after Start-Up
- Output Voltage Range: 2.2V to 15V
- 800mA Output Current for $V_{IN} = 5V$ & $V_{OUT} = 12V$
- Output Disconnects from Input when Shut Down
- Synchronous Rectification: Up to 95% Efficiency
- Inrush Current Limit
- Up to 3MHz Adjustable Switching Frequency Synchronizable to External Clock
- Selectable Burst Mode[®] Operation: 25 μ A I_Q
- Output Overvoltage Protection
- Soft-Start
- <1 μ A in Shutdown
- 12-Lead, 3mm x 4mm x 0.75mm Thermally Enhanced DFN & MSOP 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 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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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