



60V No R_{SENSE} Boost Controller Eliminates Heat Sink with 97% Efficiency

MILPITAS, CA – June 21, 2007 – Linear Technology Corporation announces the LTC3814-5, a synchronous No R_{SENSE} step-up switching regulator controller that eliminates the boost diode and the heat sink normally required in medium to high power non-synchronous boost converters. The LTC3814-5 can regulate output voltages up to 60V and has powerful 1 ohm on-board dual n-channel MOSFET gate drivers that are capable of supplying high currents to slew large MOSFET gates quickly. This minimizes transition losses and allows paralleling of MOSFETs for higher current applications. The LTC3814-5 can regulate a 24V at 4A output with up to 97% efficiency from a 4.5V to 14V input source. Applications include automotive, avionics, telecom, networking equipment, servers, industrial control systems and base stations where a step-up DC/DC converter must deliver high power with low heat dissipation in a small solution size.

The LTC3814-5 utilizes current mode control and maintains $\pm 0.875\%$ reference voltage accuracy over an operating temperature range of -40°C to 85°C . In addition, this part uses a constant off-time peak current control architecture and has a high bandwidth (25MHz) error amplifier that provides very fast line and load transient response. The constant off-time current mode architecture provides accurate cycle-by-cycle current limit protection; a feature that is essential to protect the high voltage output from over-current conditions. Furthermore, the operating frequency is selected by an external resistor from 100kHz to 1MHz which is also compensated for V_{IN} variations and can be synchronized to an external clock for noise sensitive applications. The LTC3814-5 has programmable soft-start, undervoltage lockout on the driver supply, output overvoltage protection and a power good signal that monitors the output voltage.

The LTC3814-5 is offered in a thermally enhanced TSSOP-16 package. Pricing for 1,000-piece quantities begins at \$3.50 each.

Photo Caption: 60V Synchronous Step-Up DC/DC Controller**Summary of Features: LTC3814-5**

- 97% Efficiency
- Up to 60V Output Voltage Operation
- Large 1 Ohm Gate Drivers
- Eliminates Heat Sink in Medium to High Power Requirements
- No Current Sense Resistor Required
- Current Mode Control
- Adjustable Constant Off-Time for Extremely Fast Transient Response
- $\pm 0.875\%$ Reference Accuracy over -40°C to $+85^{\circ}\text{C}$
- Programmable Soft-Start
- Power Good Signal
- Undervoltage Lockout
- Adjustable Cycle-by-Cycle Current Limit

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, 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. For more information, visit www.linear.com

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