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## **100V Synchronous No $R_{SENSE}$ Step-Up DC/DC Controller with 97% Efficiency Eliminates Heat Sink**

MILPITAS, CA – June 28, 2007 – Linear Technology Corporation announces the LTC3813, 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 LTC3813 can regulate output voltages up to 100V 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. In addition, the LTC3813 can regulate a 50V at 4A output with up to 97% efficiency from a 10V to 40V input source. Applications include automotive, avionics, telecom, networking equipment, servers, industrial control systems and basestations where a step-up DC/DC converter must deliver high power with low heat dissipation in a small solution size.

The LTC3813 utilizes current mode control and maintains  $\pm 0.875\%$  reference voltage accuracy over an operating temperature range of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ . Furthermore, 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 high voltage outputs from over-current conditions. 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. Moreover, this part has a programmable soft-start, programmable undervoltage lockout and a power good signal that monitors the output voltage.

The LTC3813 is offered in the SSOP-28 package which provides 3 unconnected pins between adjacent high and low voltage pins for extra PC board trace clearance, compliant with circuit board design standard IPC-2221 regarding high voltage pin spacing. Pricing for 1,000-piece quantities begins at \$3.75 each.


## **Photo Caption:** 100V Synchronous Step-Up DC/DC Controller

### **Summary of Features: LTC3813**

- Up to 100V Output Voltage Operation
- 97% Efficiency
- 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
- Synchronizable to an external Clock
- $\pm 0.875\%$  Reference Accuracy over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Programmable Soft-Start
- Power Good Signal
- Programmable 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](http://www.linear.com)

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