100V High Speed Synchronous N-Channel 3Amp MOSFET Driver for High Efficiency Step-Down or Step-Up DC/DC Converters

MILPITAS, CA – December 4, 2007 – Linear Technology Corporation announces the LTC4444, a high-speed, high input supply voltage (100V) synchronous MOSFET driver designed to drive upper and lower power N-Channel MOSFETs in synchronous rectified converter topologies. This driver, combined with power MOSFETs and one of Linear Technology's many DC/DC controllers, form a complete high efficiency synchronous converter.

This powerful driver can source up to 2.5A with a 1.2 Ohm pull-down impedance for driving the top MOSFET and source 3A with a 0.55 Ohm pull-down impedance for the bottom MOSFET, making it ideal for driving high gate capacitance, high current MOSFETs. The LTC4444 can also drive multiple MOSFETs in parallel for higher current applications. The fast 8ns rise time, 5ns fall time of the top MOSFET, and 6ns rise time, 3ns fall time of the bottom MOSFET when driving a 1,000 pF load minimize switching losses. Adaptive shoot-through protection is integrated to minimize dead time while preventing both the upper and lower MOSFETs from conducting simultaneously.

The LTC4444 is configured for two supply-independent inputs. The high-side input logic signal is internally level-shifted to the bootstrap supply, which may function at up to 114V above ground. Furthermore, this part drives both upper and lower MOSFET gates over a range of 7.2V to 13.5V.

The LTC4444EMS8 and LTC4444IMS8 are offered in a thermally enhanced MSOP-8 package with prices starting at $1.69 for 1000-piece quantities.

Photo Caption: 100V Synchronous MOSFET Driver for DC/DC Converters

Summary of Features: LTC4444

- High Speed/High Voltage Synchronous N-Channel MOSFET Driver
- 100V Maximum Supply Voltage
- High Drive Current – 3A Source, 0.55Ohm Sink
- 7.2V to 13.5V Gate Drive Voltage
- Adaptive Shoot-Through Protection
- Top Gate-8ns Rise, 5ns Fall Times when Driving 1,000 pF
- Bottom Gate-6ns Rise, 3ns Fall Times when Driving 1,000 pF
- Undervoltage Lockout for Gate Drive Voltage
- Thermally Enhanced MSOP-8 Package

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, uModule™ products, 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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