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100V, Full Featured LED Controller for Boost, Buck or Buck-Boost High Current LED Applications

MILPITAS, CA – September 24, 2008 – Linear Technology announces the LT3756, a 100V, high-side current sense DC/DC converter designed to drive high current LEDs. Its 6V to 100V input voltage range makes it ideal for a wide variety of applications, including automotive, industrial and architectural lighting. The LT3756 uses an external N-channel MOSFET and can drive up to 20 1A white LEDs from a nominal 12V input, delivering in excess of 70 watts. It incorporates a high-side current sense, enabling it to be used in boost, buck, buck-boost or SEPIC and flyback topologies. The LT3756 can deliver efficiencies of over 94% in boost mode, eliminating any need for external heat sinking. A frequency adjust pin permits the user to program the frequency between 100kHz and 1MHz, optimizing efficiency while minimizing external component size and cost. Combined with a 3mm x 3mm QFN or a thermally enhanced MSOP-16 package, the LT3756 offers a very compact 70-watt LED driver solution.

The LT3756 uses True Color PWM™ dimming, delivering constant LED color with dimming ranges up to 3,000:1. For less demanding requirements, the CTRL pin can be used to offer a 10:1 analog dimming range. Its fixed frequency, current mode architecture ensures stable operation over a wide range of supply and output voltages. A ground referenced voltage FB pin serves as the input for several LED protection features, making it possible for the converter to operate as a constant-voltage source.

Two versions of the LT3756 are available. The standard LT3756 offers an Open LED Status pin, and the LT3756-1 replaces the Open LED Status pin with a frequency synchronization pin.

Both the LT3756EUD and LT3756EUD-1 are available from stock in a 16-pin 3mm x 3mm QFN package. The LT3756EMSE and LT3756EMSE-1 are both available in a thermally enhanced MSOP-16E package. Pricing starts at \$2.90 each for the QFN package options and \$3.00 each for the MSOP-16E options. Also available from stock are extended temperature versions, or “I” grades, namely the LT3756IUD and LT3756IUD-1, with pricing starting at \$3.30 each, in 1,000-piece quantities. Similarly, “I” grade options of the MSOP-16 versions, the LT3756IMSE and LT3756IMSE-1 are priced starting at \$3.40 each in 1,000-piece quantities.

Photo Caption: Full-Featured LED Controller Delivers over 50 Watts of LED Power


Summary of Features: LT3756/-1

- 3000:1 True Color PWM Dimming
- Wide Input Voltage Range: 6V to 100V
- Output Voltage Up to 100V
- Constant-Current & Constant-Voltage Regulation
- 100mV High Side Current Sense
- Drives LEDs in Boost, Buck Mode, Buck-Boost Mode, SEPIC or Flyback Topology
- Adjustable Frequency: 100kHz to 1MHz
- Programmable Undervoltage Lockout with Hysteresis
- Open LED Status Pin (LT3756)
- Frequency Synchronization (LT3756-1)
- PWM Disconnect Switch Driver
- CTRL Pin Provides Analog Dimming
- Low Shutdown Current: <1uA
- Programmable Soft-Start
- Thermally Enhanced 16-Lead QFN 3mm x 3mm Package or MSOP-16E 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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