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Multi-Topology 40V, 4.5A LED Driver for High Current LED Applications

MILPITAS, CA – March 13, 2007 – Linear Technology announces the LT3478 and LT3478-1, two 40V, 4.5A DC/DC converters designed to drive high current LEDs at constant current. Their 2.8V to 36V input range is ideal for a wide variety of applications, including automotive, industrial and architectural lighting. In boost mode, the LT3478/-1 can drive up to six 700mA LEDs in series from a 12V input, making the device ideal for applications such as automotive display backlighting. The LT3478-1 uses an internal current sense resistor, limiting output current to 1A, whereas the LT3478 uses an external sense resistor to extend the maximum LED current up to 4.5A. Both parts deliver efficiencies up to 90% in boost mode from a thermally enhanced TSSOP-16E package. The devices use True Color PWM™ dimming, which delivers constant LED color with dimming ranges up to 3,000:1, and a fixed frequency, current mode architecture offers stable operation over a wide range of supply and output voltages. A frequency adjust pin enables the user to program the frequency between 200kHz and 2.25MHz, optimizing efficiency while minimizing external component size.

The LT3478/-1 senses output current at the high side of the LED, enabling buck, buck-boost or boost configurations. One of the two CNTRL pins can be used to program maximum LED current and the other can be used to program a reduction in maximum LED current with increases in temperature, thereby maximizing LED usage and improving overall reliability. Other features include inrush current protection, open LED protection and programmable soft-start.

The LT3478EFE and LT3478EFE-1 are available from stock in a thermally enhanced 16-Lead TSSOP-16E package. Pricing starts at \$3.60 each for both versions. Extended temperature versions, “T” Grades, the LT3478IFE and LT3478IFE-1, are also available from stock. Pricing starts at \$4.32 each for both versions in 1,000-piece quantities.

Photo Caption: 40V, 4.5A LED Driver for High Current LED Applications**Summary of Features: LT3478 & LT3478-1**

- True Color PWM Dimming Delivers Constant LED Color with up to 3000:1 Range
- Wide Input Voltage Range: 2.8V to 36V
- 4.5A, 60mΩ, 42V Internal Switch
- Drives LEDs in Boost, Buck-Boost or Buck Modes
- Integrated Resistors for Inductor and LED Current Sensing
- Program LED Current: 100mA to 1050mA (LT3478-1) (10mV to 105mV)/R_{SENSE} (LT3478)
- Program LED Current De-Rating vs. Temperature
- Separate Inductor Supply Input
- Inrush Current Protection
- Programmable Soft-Start

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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