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## **250mA Universal Cell Phone LED Driver Drives 9 LEDs With Low Noise and 91% Efficiency**

MILPITAS, CA – August 7, 2007 – Linear Technology Corporation announces the LTC3219, an inductorless, low noise, high efficiency LED driver for cell phone displays and lighting. The IC provides nine individually configurable current sources for Main, Sub and RGB displays. Display currents are set via a precision internal current reference. The universal current sources can be digitally controlled with independent dimming, brightness, blinking, and gradation control, programmable via a simple two-wire I<sup>2</sup>C serial interface. The LTC3219's 2.9V to 5.5V input voltage range has been optimized for single cell Li-Ion/Polymer battery applications. Efficiencies when driven from a Lithium battery (3.6V nominal) reach 91% with a quiescent current of only 400uA, maximizing battery run-time. Slew-rate limited switching reduces conducted and radiated noise (EMI).

The LTC3219's multimode charge pump features low-noise constant-frequency operation, automatically optimizing efficiency based on the voltages across the LED current sources. The device powers up in 1x mode and automatically switches to boost mode (1.5x) when any enabled LED current source approaches dropout; a subsequent dropout switches the device into doubler (2x) mode. Internal circuitry prevents inrush current and excessive input noise during start-up and mode switching. In addition, the device has short circuit and thermal protection.

The LTC3219 is available from stock in the low-profile (0.75mm) 20-lead QFN (3mm x 3mm) package. The IC requires only five small capacitors for a tiny, complete LED power supply and current controller solution. Pricing starts at \$1.80 each for 1,000-piece quantities.


## **Photo Caption: 250mA Universal Multi-Output LED Driver**

### **Summary of Features: LTC3219**

- Multimode 1x/1.5x/2x Low Noise Charge Pump Provides up to 91% Efficiency
- Slew Rate Limited Switching Reduces Conducted & Radiated Noise (EMI)
- Up to 250mA Total Output Current
- Nine Independently Configurable 28mA Current Sources with 64-Step Linear Brightness Control
- Independent ON/OFF, Brightness Level, Blinking and Gradation Control for Each Current Source Using 2-Wire I<sup>2</sup>C Interface
- 2.9V to 5.5V Input Voltage Range Optimized for Li-Ion/Polymer Applications
- Internal Current Reference
- Configurable ENU Pin for Asynchronous LED ON/OFF Control
- Automatic or Manual Mode Switching
- Internal Soft-Start Limits Inrush Current
- Short Circuit/Thermal Protection
- Tiny, Low-Profile 3mm x 3mm x 0.75mm QFN-20 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, 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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