



Synchronous Step-Down LED Driver Delivers up to 40A of LED Current

MILPITAS, CA – March 26, 2015 – Linear Technology announces the [LT3744](#), a synchronous step-down DC/DC converter designed to deliver constant current to drive high current LEDs. Its 3.3V to 36V input voltage range makes it ideal for a wide variety of applications, including industrial, DLP projection and architectural lighting. The LT3744 uses two external switching MOSFETs, delivering up to 20A (80W) of continuous LED current from a nominal 12V input. In pulsed LED applications, it can deliver up to 40A of LED current or 160 watts from a 12V input. Delivering efficiencies as high as 95%, it can eliminate the need for external heat sinking.

The LT3744's peak current mode controller maintains $\pm 3\%$ LED current regulation over a wide voltage range from V_{EE} to V_{IN} . By allowing V_{EE} to float to negative voltages, several LEDs can be driven from a single Li-Ion battery with a simple, single step-down output stage. Additionally, this enables a unique inverting step-down topology which allows a single common anode heat sink to be used for RGB LEDs. A frequency adjust pin allows the user to program the frequency between 100kHz and 1MHz, optimizing efficiency while minimizing external component size. Combined with its 5mm x 6mm QFN package, the LT3744 offers a very compact 80 watt LED driver solution.

The LT3744 provides both PWM dimming and CTRL dimming, which offer 3,000:1 dimming capability for four LED current levels, ideal for color mixing applications, such as those required in DLP projectors. Similarly, its unique topology enables it to transition between two regulated LED currents in less than 2µsec, enabling more accurate color mixing in RGB

applications. LED current accuracy of $\pm 3\%$ is maintained to offer the most accurate brightness of light emitted from the LED. Additional features include output voltage regulation and open-LED and shorted-LED protection, open-drain output fault flag, frequency synchronization and thermal shutdown.

The LT3744 is available in 36-pin 5mm x 6mm QFN package. Two temperature grades are available, with operation from -40°C to 125°C (junction) for the extended and industrial grades. The 1,000 piece price starts at \$4.55 each. All versions are available from stock. For more information, visit www.linear.com/product/LT3744.

Photo Caption: High LED Current Synchronous Step-Down LED Driver with 4-State Control


Summary of Features: LT3744

- Ideal for Driving up to 40A LEDs with a Single Stage
- Up to 3,000:1 PWM Dimming
- 20:1 Analog Dimming
- $\pm 3\%$ Current Regulation Accuracy
- $\pm 3\%$ Voltage Regulation Accuracy
- Unique Inverting Step-Down Topology Allows Single Common Anode Heat Sink to Be Used for RGB LEDs
- 3.3V to 36V Input Voltage Range
- Peak Current Mode with DC LED Current Sensing
- Open & Shorted LED Protection & Fault Reporting
- Floating LED Driver Allows Single Power Solution to Drive Multicolor LEDs or Single LED with Three Different Regulated Currents
- Thermally Enhanced 5mm x 6mm QFN 36-Lead Package

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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