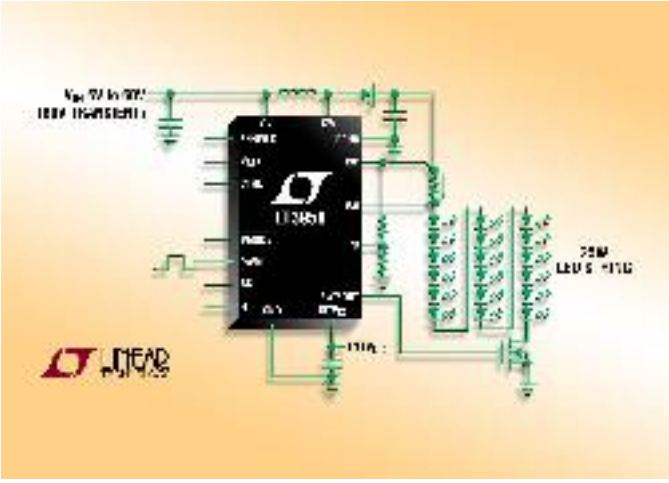
Constant Voltage and Constant Current DC to DC Converter



Linear Technology announces the LT3956, an 80 V high-side current sense DC/DC converter designed to operate as a constant-current and constant-voltage regulator. It is ideal for driving high current LEDs as well as charging batteries and supercaps. Its 4.5 to 80 V input voltage range makes it ideal for a wide variety of applications. The LT3956 uses an internal N-channel MOSFET and can drive up to eighteen 350 mA white LEDs from a nominal 12 V input, delivering in excess of 25 Watts. It incorporates a high-side current sense, enabling use in boost, buck, buck-boost or SEPIC and flyback topologies. The LT3956 delivers efficiencies of over 94% in boost mode, eliminating the need for external heat sinking. A frequency adjust pin permits the user to program the frequency between 100 kHz and 1 MHz, optimizing efficiency while minimizing external component size and cost. Combined with a 5 x 6 mm QFN package, the LT3956 offers a highly compact 25 Watt LED driver solution.
The LT3956 uses True Color PWM dimming, delivering constant LED color with dimming ranges up to 3,000:1. For less demanding dimming requirements, the CTRL pin provides a 10:1 analog dimming range. The LT3956's 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, enabling the converter to operate as a constant-voltage source.

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