



60V, Synchronous Buck-Boost Controller

MILPITAS, CA – November 26, 2014 – Linear Technology announces the [LT3790](#), a synchronous buck-boost DC/DC controller that delivers up to 250W of power with a single IC. Its 4.7V to 60V input voltage range makes it ideal for a wide variety of automotive and industrial applications. Its output voltage can be set from 0V to 60V, making it well suited as a voltage regulator or battery/supercapacitor charger. The LT3790's internal 4-switch buck-boost controller operates from input voltages above, below or equal to the output voltage, making it ideal for applications such as automotive, where the input voltage can vary dramatically during stop/start, cold crank and load dump scenarios. Transitions between buck, pass-through and boost operating modes are seamless, offering a well regulated output in spite of wide variations of supply voltage. The LT3790's unique design utilizes three control loops to monitor input current, output current and output voltage to deliver optimal performance and reliability.

The LT3790 uses four external switching MOSFETs and can deliver up to 250W of continuous output power with efficiencies up to 98.5%. Output current accuracy of $\pm 6\%$ ensures precise current regulation while $\pm 2\%$ output voltage accuracy offers a precise output voltage, making it ideal for charging applications. Multiple LT3790s can be easily paralleled for higher power requirements. Furthermore, its switching frequency can be programmed between 200kHz and 700kHz or synchronized to an external clock. Additional features include output disconnect, input and output current monitors, a C/10 charge termination and integrated fault protection.

The LT3790EFE is available in a 38-lead thermally enhanced TSSOP package, priced starting at \$4.75 each in 1,000-piece quantities. An extended temperature version, or I-grade LT3790IFE, is also available, priced starting at \$5.25 each in 1,000-piece quantities. A high temperature version, or H-grade, the LT3790HFE, is also available, priced starting at \$5.50 each in 1,000-piece quantities. Finally, an extended temperature version, or MP-grade, the LT3790MPFE, is also available, priced starting at \$14.75 each in 1,000-piece quantities. All versions are available from stock. For more information, visit www.linear.com/product/LT3790

Photo Caption: 60V Input/Output Capable, Synchronous Buck-Boost Controller


Summary of Features: LT3790

- 4-Switch Single Inductor Architecture Allows V_{IN} Above, Below or Equal to V_{OUT}
- Synchronous Switching: Up to 98.5% Efficiency
- Wide V_{IN} Range: 4.7V to 60V
- $\pm 2\%$ Output Voltage Accuracy: $1.2V \leq V_{OUT} < 60V$
- $\pm 6\%$ Output Current Accuracy: $0V \leq V_{OUT} < 60V$
- Input & Output Current Regulation with Current Monitor Outputs
- No Top FET Refresh in Buck or Boost
- V_{OUT} Disconnected from V_{IN} During Shutdown
- C/10 Charge Termination & Output Shorted Flags
- Capable of up to 250W per IC
- Easy Parallel Capability to Extend Output Power
- 38-Lead TSSOP with Exposed Pad

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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