



## **Low $I_Q$ , 60V Input Synchronous Step-Down Controller Operates Down to 2.5V $V_{IN}$**

MILPITAS, CA – February 20, 2014 – Linear Technology Corporation announces the [LT3840](#), a wide range synchronous step-down DC/DC controller which includes a 7.5V buck-boost bias voltage to provide efficient gate drive over a 2.5V to 60V input voltage range. The LT3840 generates a 7.5V bias voltage for MOSFET gate drive regardless of whether the input voltage is above, below or equal to 7.5V. The 2.5V to 60V supply range is designed to protect against high voltage transients and continuing operation during automotive cold crank, as well as covering a broad range of input sources and battery chemistries.

The LT3840 draws only 75 $\mu$ A when regulating the output voltage with no load, extending the run time in battery-powered applications. The output voltage can be set from 1.25V to 60V at output currents up to 30 amps with efficiencies as high as 95%, making it well suited for 12V or 24V automotive, heavy equipment, industrial control, robotics and telecom applications. Accurate current regulation is achieved with the LT3840 programmable current limit while the current monitor function reports the average output current. The user can select from continuous operation, pulse skipping and low ripple Burst Mode<sup>®</sup> operation during light loads.

The LT3840 has powerful on-chip gate drivers for driving multiple standard or logic level N-channel MOSFETs. It operates with a selectable fixed frequency between 50kHz and 1MHz or can be synchronizable to an external clock over the same range. Its current-mode architecture provides easy loop compensation, fast transient response and excellent line regulation.

Additional features include up to 99% duty cycle for low voltage dropout, accurate over-and undervoltage lockouts, soft-start/tracking and a power good signal.

The LT3840 is available in 28-lead TSSOP and 4mm x 6mm QFN-38 thermally enhanced packages. Extended and industrial versions from -40 to 125°C, a high temp automotive grade version from -40°C to 150°C and a military grade version from -55°C to 150°C are also available. 1,000-piece pricing starts at \$3.65 each. For more information, visit

[www.linear.com/product/LT3840](http://www.linear.com/product/LT3840)

**Photo Caption:** High Voltage DC/DC Synchronous Controller

### **Summary of Features: LT3840**

- Wide Input Voltage Range: 2.5V to 60V
- Integrated Buck-Boost Regulator Generates 7.5V MOSFET Gate Drive
- 75 $\mu$ A Quiescent Current
- Wide Output Voltage Range: 1.25V to 60V
- Internal OVLO Protects for Input Transients up to 80V
- Synchronous Rectification for up to 95% Efficiency
- Programmable Constant-Current Operation with Current Monitor Output
- Selectable Low Ripple Burst Mode<sup>®</sup> Operation, Pulse Skipping or Continuous Operation
- Synchronizable Selectable Fixed Operating Frequency from 50kHz to 1MHz
- Current-Mode Control for Fast Transient Response & Easy Loop Compensation
- Adjustable Soft-Start & Voltage Tracking
- Output Overvoltage Protection
- Extended & Industrial Grades: -40°C to 125°C Operating Junction Temp
- Automotive Temp Grade: -40°C to 150°C Operating Junction Temp
- Military Temp Grade: -55°C to 150°C Operating Junction Temp

## 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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