



## **60V Input, Low $I_Q$ Inverting DC/DC Controller Simplifies Design by Using Only a Single Inductor**

MILPITAS, CA – April 1, 2013 – Linear Technology Corporation introduces the [LTC3863](#), a high voltage inverting DC/DC controller that uses just a single inductor to produce a negative voltage from a positive input voltage. Most low to medium power inverters utilize a coupled inductor topology, or transformer which increases the circuit size and complexity. The LTC3863 simplifies the design further with all of its interface signals being positive ground referenced. None of the LTC3863 pins are connected to a negative voltage allowing the output voltage to be limited only by the selection of external components.

The LTC3863, operating over a 3.5V to 60V input supply range, is designed to protect against high voltage transients, to operate continuously during automotive cold crank and cover a broad range of input sources and battery chemistries. This device helps increase the run-time in battery-powered applications with its low 70 $\mu$ A quiescent current in standby mode with the output enabled in Burst Mode<sup>®</sup> operation. The LTC3863's output voltage can be set from -0.4V to -150V or lower at up to 3A typical; making it well suited for 12V or 24V automotive, heavy equipment, industrial control, robotic and telecom applications.

The LTC3863 drives an external P-channel MOSFET, operates with a selectable fixed frequency between 50kHz and 850kHz and is synchronizable to an external clock from 75kHz to 750kHz. Its current-mode architecture provides easy loop compensation, fast transient response, cycle-by-cycle over current protection and excellent line regulation. Output current sensing is accomplished by measuring the voltage drop across a sense resistor. Additional

features include programmable soft start or tracking, overvoltage protection, overcurrent and short-circuit protection, a power good output signal and FMEA (failure mode and effects analysis) verified for adjacent pin opens and shorts.

The LTC3863 is offered in 12-pin thermally enhanced MSOP and 3mm X 4mm QFN packages. The LTC3863E and LTC3863I versions operate from a -40°C to 125°C junction temperature. The LTC3863H grade is guaranteed to operate from a -40°C to 150°C operating junction temperature. The LTC3863MP is guaranteed to operate from a -55°C to 150°C operating junction temperature. The 1,000-piece price starts at \$2.06 each. For more information, visit [www.linear.com/product/LTC3863](http://www.linear.com/product/LTC3863).


**Photo Caption:** 60V Low  $I_Q$  Inverting Controller

### Summary of Features: LTC3863

- $V_{IN}$  Range from 3.5V to 60V
- Wide  $V_{OUT}$  Range: -0.4V to -150V
- Requires Only One Inductor
- Low Quiescent Current 70 $\mu$ A in Standby mode
- Selectable Low Ripple Burst Mode<sup>®</sup> Operation or Pulse Skipping at Light Loads
- Selectable Fixed Operating Frequency from 50kHz to 850kHz
- PLL Synchronizable Operating Frequency from 75kHz to 750kHz
- Current-Mode Control for Fast Transient Response & Easy Loop Compensation
- Adjustable Soft-Start or Tracking
- Output Overvoltage & Overcurrent Protection
- Power Good Output Signal
- 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 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)

 , LT, LTC, LTM, Linear Technology, the Linear logo, Burst Mode and  $\mu$ Module are registered trademarks of Linear Technology Corp. All other trademarks are the property of their respective owners.

### Press Contacts:

#### North America / Worldwide

John Hamburger, Director Marketing  
Communications  
[jhamburger@linear.com](mailto:jhamburger@linear.com)  
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager  
[ddickinson@linear.com](mailto:ddickinson@linear.com)  
Tel: 408-432-1900 ext 2233

#### UK & Nordic

Alan Timmins  
[alan@ezwire.com](mailto:alan@ezwire.com)  
Tel: +44-1-252-629937