



140V, 250mA High Efficiency Buck Converter with Only 12µA Quiescent Current

MILPITAS, CA – February 4, 2014 – Linear Technology announces the [LTC3638](#), a 140V input-capable high efficiency buck converter that delivers up to 250mA of continuous output current. It operates from an input voltage range of 4V to 140V, making it ideal for telecom, industrial, avionic and automotive applications. The LTC3638 utilizes internal synchronous rectification and a programmable hysteretic-mode design to optimize efficiency over a broad range of output currents. It delivers efficiencies as high as 88% and requires only 12µA of quiescent current, maximizing battery run time. A user-programmable output current limit can be set from 20mA to 250mA as required by the application. The LTC3638 can be programmed with fixed output voltages of 1.8V, 3.3V or 5V or a resistor divider can be used to program outputs from 0.8V to V_{IN} . The LTC3638's thermally enhanced skipped-lead MSOP package offers the additional pin spacing required for high voltage inputs. The combination of its MSOP package and only four tiny externals provide a highly compact solution footprint for a wide range of applications.

The LTC3638 utilizes internal high side and synchronous power switches which draw only 12µA at no load while maintaining output voltage regulation, making it ideal for always on battery-powered applications. Due to the inherent stability of the converter, no external compensation is required, thereby simplifying design and minimizing the solution footprint. Additional features include a precise $0.8V \pm 1\%$ feedback voltage reference, internal or external soft-start and a feedback comparator output, which enables multiple LTC3638s to be connected in parallel for higher current applications.

Pricing for the LTC3638EMSE starts at \$3.65 each. An industrial temperature version, the LTC3638IMSE, is guaranteed over a -40°C to 125°C operating junction temperature and is priced starting at \$4.02 each. An automotive temperature version, the LTC3638HMSE, is guaranteed from -40°C to 150°C operating junction temperature and is priced starting at \$4.27 each. Finally, a high reliability military plastic version, the LTC3638MPMSE, is tested and guaranteed to meet spectacular over a -55°C to 150°C operating junction temperature and is priced starting at \$10.84 each. All pricing is in 1,000-piece quantities and all versions are available from stock. For more information, visit www.linear.com/product/LTC3638


Photo Caption: 140V, 250mA Synchronous Buck Converter

Summary of Features: LTC3638

- Wide Operating Input Voltage Range: 4V to 140V
- Synchronous Operation for Highest Efficiency
- Adjustable 20mA to 250mA Maximum Output Current
- Internal High Side & Low Side Power MOSFETs
- No Compensation Required
- Low Dropout Operation: 100% Duty Cycle
- Low Quiescent Current: 12 μ A
- Wide Output Range: 0.8V to V_{IN}
- 0.8V \pm 1% Feedback Voltage Reference
- Precise RUN Pin Threshold
- Internal or External Soft-Start
- Programmable 1.8V, 3.3V, 5V or Adjustable Output
- Few External Components Required
- Programmable Input Overvoltage Lockout
- Thermally Enhanced High Voltage MSOP Package

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, µModule[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937