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## **37V<sub>IN</sub>, 1.2A(I<sub>OUT</sub>), 2.5MHz Step-Down DC/DC Converter Withstands 55V Transients**

MILPITAS, CA – December 3, 2009 – Linear Technology Corporation announces the LT3686, a 1.2A, 37V<sub>IN</sub> step-down switching regulator. The LT3686 operates within a V<sub>IN</sub> range of 3.6V to 37V with overvoltage lockout, protecting the regulator and load from transients as high as 55V, making it ideal for load dump and cold-crank conditions commonly found in automotive applications as well as 24V industrial supplies. Its internal 1.85A switch can deliver up to 1.2A of continuous output current at voltages as low as 0.8V. Its low minimum on-time enables it to offer high switching frequencies even with high step-down ratios. For example, with an input as high as 16V, it can deliver a 3.3V output using a 2MHz switching frequency. The LT3686's switching frequency is user programmable from 300kHz to 2.5MHz, enabling designers to maximize efficiency while avoiding critical noise-sensitive frequency bands. The LT3686 also uses a unique design, which ensures that it maintains constant frequency switching, even in very light load conditions. The device's 3mm x 3mm DFN-10 package and high switching frequency, which keeps the external inductor and capacitors small, provides a compact, thermally efficient footprint.

The LT3686 utilizes a high efficiency 1.85A, 680mV switch with the necessary boost diode, oscillator, control and logic circuitry integrated into a single chip. Its catch diode current sense (DA pin) protects the circuit during input voltage transients even at high switching frequencies. Special design techniques used in the LT3686 enable high efficiency over a wide input voltage range, and the device's current mode topology enables fast transient response and excellent loop stability. Other features include tracking capability, internal compensation and soft-start capability.

Pricing for the LT3686EDD starts at \$2.50 each for 1,000-piece quantities. An industrial grade version, LT3686IDD, is guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$2.78 each. Both versions are available from stock. For more information, visit [www.linear.com](http://www.linear.com).


## **Photo Caption: 37V<sub>IN</sub>, 1.2A(I<sub>OUT</sub>), 2.5MHz Step-Down DC/DC Converter**

### **Summary of Features: LT3686**

- Wide Input Range:
  - Operation from 3.6V to 37V
  - Overvoltage Lockout Protects Circuit through 55V Transients
- Low Minimum On-Time: Converts 16V<sub>IN</sub> to 3.3V<sub>OUT</sub> at 2MHz
- 1.2A Output Current
- Adjustable Frequency: 300kHz to 2.5MHz, with  $\pm 5\%$  Accuracy
- Constant Switching Frequency at Light Loads
- Tracking & Soft Start
- Precision UVLO
- Short-Circuit Robust
- I<sub>Q</sub> in Shutdown <1uA
- Internally Compensated
- 3mm x 3mm DFN Package

### **About Linear Technology**

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule<sup>®</sup> products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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