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## **37V, 1.2A ( $I_{OUT}$ ), 2.5MHz Step-Down DC/DC Converter with 150°C Maximum Junction Temperature**

MILPITAS, CA – July 1, 2010 – Linear Technology announces the H-Grade version of the LT3686. The [LT3686H](#) is a 1.2A, 37V<sub>IN</sub> step-down switching regulator. The LT3686H 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. The LT3686H's switching frequency is user programmable from 300kHz to 2.5MHz, enabling designers to maximize efficiency while avoiding critical noise-sensitive frequency bands. Its low minimum on-time enables it to provide 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 LT3686H 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 H-grade version operates up to a junction temperature of 150°C, compared to the E and I grade versions' 125°C maximum junction temperature. All electrical specifications are identical for the E, I and H grade versions. The H-grade versions are tested and guaranteed to the maximum junction temperature of 150°C, making them ideal for automotive and industrial applications which are subjected to high ambient temperatures.

Pricing for the LT3686HDD starts at \$3.03 each in 1,000-piece quantities and is available from stock. For more information, visit [www.linear.com/pr/3686H](http://www.linear.com/pr/3686H).


**Photo Caption:** 37V with 55V Transient Protection, 1.2A Step Down DC/DC Converter with  
150°C Maximum Junction Temperature

### Summary of Features: LT3686H

- Wide Input Range:
  - Operation from 3.6V to 37V
  - Overvoltage Lockout Protects Circuit through 55V Transients
- Low Minimum On-Time: Converts 16<sub>VIN</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
- IQ in Shutdown <1 $\mu$ A
- Internally Compensated
- 3mm  $\times$  3mm DFN Package
- Maximum Junction Temperature of 150°C

### 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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