



2.2V Input High Power Step-Down DC/DC Controller Uses Standard 5V N-Channel MOSFETs

MILPITAS, CA – December 6, 2006 – Linear Technology Corporation introduces the LT3740, a high output power step-down synchronous controller that operates from very low input voltages without needing an auxiliary 5V gate drive supply. In addition to a DC/DC step-down controller, the LT3740 integrates a DC/DC step-up converter for generating its own MOSFET gate drive voltage. This function permits the use of inexpensive off-the-shelf 5V gate-drive N-channel MOSFETs, offering up to 3% higher efficiency than sub-logic gate-drive MOSFETs and eliminating the need for a secondary supply. The LT3740 is ideal for converting input supplies ranging from 2.2V to 22V to an output as low as 0.8V and at load currents from 2A to 20A with 93% typical efficiency. Applications include distributed power systems, point-of-load regulation and conversion of logic supplies. In particular, the LT3740 can step down from 5V, 3.3V and 2.5V rails.

The LT3740 operates at a fixed frequency of 300kHz and employs valley current mode control to deliver excellent transient response and very low on-times. In addition, the LT3740 uses low-side MOSFET current-sense architecture for current limiting and overload protection, eliminating the need for a sense resistor while improving efficiency. Three current limit threshold levels can be selected by connecting the range pin to ground, open or the input voltage. Furthermore, a power good signal is available to monitor the output voltage and the device has a tracking function that allows output voltage control during power up and power down.

The LT3740 is offered in a 16-lead 5mm x 3mm DFN package with an operating temperature range from -40°C to 85°C. Pricing starts at \$1.95 each in 1,000-piece quantities.

Photo Caption: 2.2V Input High Power Step-Down DC/DC Controller

Summary of Features: LT3740

- Low Input Voltage: 2.2V
- High Output Power – up to 20A
- 5V Drive for N-Channel MOSFETs Eliminates Auxiliary 5V Supply
- Uses Standard 5V Logic-Level N-Channel MOSFETs
- Valley Current Mode Control for Excellent Line and Load Regulation
- No Sense Resistor Required (uses MOSFET $R_{DS(ON)}$ for Sensing)
- Three Selectable Current Limit Levels
- Power Good Signal and Tracking Function

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, 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. For more information, visit www.linear.com

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