



5mm x 5mm 3-Phase DC/DC Controller Operates up to 140°C

MILPITAS, CA – March 23, 2010 – Linear Technology Corporation introduces the LTC3731H, a PolyPhase[®] high efficiency (up to 95%) synchronous DC/DC controller with guaranteed operation for junction temperatures as high as 140°C offered in a 5mm x 5mm QFN package. This rugged DC/DC controller is expandable from 3- to 12-phase operation for 60A to 240A power supply designs. The precision $\pm 5\%$ output phase current matching simplifies thermal management by evenly spreading the heat among the output stages. Applications include high current ASIC and FPGA supplies, power distribution buses, automotive engine control units and network servers.

The LTC3731 can be configured as a buck or boost converter and operates with all N-channel MOSFETs from an input voltage ranging from 4.5V to 28V. The powerful onboard gate drivers minimize MOSFET switching losses and allow the use of multiple MOSFETs connected in parallel. A fixed operating frequency can be programmed for each phase from 250kHz to 600kHz or can be synchronized to an external clock with its phase-locked loop (PLL). The device's minimum on-time of just 110ns makes the LTC3731 ideal for high step-down ratio applications. The reference voltage maintains $\pm 2\%$ accuracy over the full -40° to 140°C operating junction temperature range.

The LTC3731H incorporates a power saving Stage Shedding[™] technique to increase the efficiency and improve battery life at light loads by eliminating the gate charging losses and switching losses of two of its output stages. Additional features include current mode control, programmable soft start, short-circuit and overload protection as well as adjustable soft-start.


The LTC3731H is now available in a 32-lead 5mm x 5mm QFN package as well as a 36-pin SSOP package. Pricing starts at \$5.00 each in 1,000-piece quantities. For more information, visit www.linear.com.

Photo Caption: Polyphase[®] DC/DC Controller Operates up to 140°C**Summary of Features: LTC3731H**

- -40°C to 140°C Guaranteed Operation
- High Output Current (60A to 240A) Capable
- 3- to 12-Phase Operation
- $\pm 5\%$ Output Phase Current Matching
- V_{IN} Range: 4.5V to 28V
- V_{OUT} Range: 0.6V to 5.25V
- Synchronous Rectification - Up to 95% Efficiency
- R_{SENSE} Current Sense
- 250kHz to 600kHz per Phase, PLL, Fixed Frequency
- Current Mode Control for Fast Transient Response & Easy Loop Compensation
- Adjustable Soft-Start
- $\pm 2\%$ Voltage Reference Accuracy Over -40°C to 140°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[®] 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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