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## **High Power Dual Output Multiphase Step-Down DC/DC Controller with Differential Output Voltage Sensing, Tracking & PLL**

MILPITAS, CA – September 11, 2007 – Linear Technology Corporation introduces the LTC3811, a dual output synchronous step-down DC/DC controller with multiphase operation, differential output voltage sensing and integrated phase-lock loop (PLL) synchronization. Up to 12 phases can be paralleled and clocked out-of-phase to minimize the input and output filtering requirements for high current applications (up to 200A). The differential amplifier provides true remote output voltage sensing, enabling high accuracy regulation where IR losses occur through vias, trace runs and interconnects. Applications include high current ASIC supplies, power distribution buses, high power audio amplifiers and network servers.

The LTC3811 operates with all N-channel MOSFETs from input voltages ranging from 4.5V to 30V and is optimized for low output voltages from 0.6V to 3.3V. The on-board 0.9 ohm powerful gate drivers minimize MOSFET switching losses and allow the use of multiple MOSFETs connected in parallel for very high current applications. The operating frequency can be programmed from 250kHz to 750kHz or can be synchronized to an external clock with internal phase-lock-loop (PLL) from 150kHz to 900kHz. The LTC3811 uses peak current mode control with a minimum on-time of 65nS and responds almost instantly to a transient event. In addition, the LTC3811 current limit sense threshold can be programmed from 24mV to 85mV, allowing the use of DCR sensing of the output inductors voltage drop or with a discrete sense resistor. In either case, the current limit is user-programmable, ensuring optimum system efficiency and excellent control over the maximum output current.

The LTC3811  $V_{REF}$  accuracy is a best in class  $\pm 0.5\%$  over an operating temperature range of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ . Tracking and sequencing functions enable optimization of power-up and power-down of multiple power supplies. Additional features include an on-board LDO for IC power and gate drive, programmable soft start, two power good signals and external  $V_{CC}$  control for the optional use of an external voltage to power the chip.

The LTC3811 is offered in a 36-lead SSOP or a 38-lead 5mm x 7mm QFN package. The 1,000-piece price starts at \$3.75 each.


**Photo Caption:** High Power Dual Output Multiphase DC/DC Controller

### Summary of Features: LTC3811

- Multiphase Operation – UP to 12 Phases
- High Current – Up to 200A
- Wide Input Voltage Range from 4.5V to 30V
- Dual Outputs Optimized for Low Voltages from 0.6V to 3.3V
- Fixed Programmable Operating Frequency from 250kHz to 750kHz
- Synchronizable with Phase-Lock-Loop (PLL) from 150kHz to 900kHz
- True Differential Amplifiers for Remote Output Voltage Sensing
- $\pm 0.50\%$  0.6V  $V_{REF}$  Accuracy over a  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$  Operating Temp Range
- Power up/down Tracking & Sequencing
- Peak Current Mode Control
- Optional DCR or Current Sense Resistor
- Programmable Current Limit

### 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](http://www.linear.com)

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