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

MILPITAS, CA – November 10, 2009 – Linear Technology Corporation introduces the LTC3855, a dual output high efficiency (up to 95%) 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 input and output filtering requirements for high current applications (up to 200A). The differential amplifier provides true remote output voltage sensing of both the positive and negative terminals, enabling high accuracy regulation where IR losses occur through vias, trace runs and interconnects. Applications include high current ASIC and FPGA supplies, power distribution buses, high power audio amplifiers and network servers.

The LTC3855 operates with all N-channel MOSFETs from input voltages ranging from 4.5V to 38V, and it can produce  $\pm 0.75\%$  accurate output voltages from 0.6V to 12.5V. The output current is sensed by monitoring the voltage drop across the output inductor (DCR) or by using a sense resistor. Programmable DCR temperature compensation maintains an accurate and constant over current limit over a broad temperature range. The onboard 1.1Ohm gate driver minimizes MOSFET switching losses and allows the use of multiple MOSFETs connected in parallel. A fixed operating frequency can be programmed from 250kHz to 770kHz or can be synchronized to an external clock with its internal PLL. The device's minimum on-time of just 90ns makes the LTC3855 ideal for high step-down ratio applications.

Tracking and sequencing functions allow the optimization of power-up and power-down of multiple power supplies. Additional features include current mode control, an onboard LDO for IC power, programmable soft start, two power good signals and external  $V_{CC}$  control.

The LTC3855 is available in 38-lead SSOP or 40-lead 6mm x 6mm QFN packages. The LTC3855E operates from -40°C to 85°C, with the 1000-piece price starting at \$3.18. The LTC3855I Industrial grade version operates from -40°C to 125°C, with a 1,000-piece price

starting at \$3.59 each. Both versions are available from stock. For more information, visit  
[www.linear.com](http://www.linear.com).


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

### Summary of Features: LTC3855

- Multiphase Operation – Up to 12 Phases
- High Efficiency – Up to 95%
- High Power – Up to 200A
- Wide Input Voltage Range from 4.5V to 38V
- Output Voltages Ranging from 0.6V to 12.5V,  $\pm 0.75\%$  Accuracy
- $R_{SENSE}$  or DCR Current Sensing
- Programmable DCR Temperature Compensation
- Powerful 1.1Ohm Dual N-Channel MOSFET Gate Driver
- True Differential Amplifiers for Remote Output Voltage Sensing
- Output Voltage Tracking or Programmable Soft Start
- Phase-Lockable Fixed Frequency from 250kHz to 770kHz
- Current Mode Control for Accurate & Easy Current Sharing

### 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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