



High Efficiency Dual Synchronous Buck Controller Provides Complete DDR Power Solution & Complies with DDR1/DDR2/DDR3 Standards

MILPITAS, CA – December 15, 2011 – Linear Technology Corporation introduces the [LTC3876](#), a high-efficiency dual output synchronous step-down DC/DC controller that generates the VDDQ supply voltage, the VTT bus termination voltage and the VTTR reference voltage for DDR1/DDR2/DDR3 and future standard memory applications. The output of the first channel produces VDDQ and can be programmed from 2.5V down to 1V at up to 25A. The output of the second channel produces VTT and offers superior load regulation accuracy and efficiency. An internal LDO provides the precision $\pm 1.2\%$ VTTR reference. Both VTT and VTTR are programmed by an internal resistor divider equal to one-half the VDDQ supply and operate from 1.25V to 0.5V to support all DDR standards. The VTT supply offers symmetrical output current capability, with $\pm 25\text{A}$ (sourcing/sinking) at VTT and $\pm 50\text{mA}$ at VTTR.

The LTC3876 operates from an input voltage range of 4.5V to 38V. The switching frequency is programmable up to 2MHz allowing the use of very small external components. For noise-sensitive applications, the LTC3876 switching frequency can be synchronized to an external clock. The two channels can be phase shifted at 0° , 90° , 180° or 270° to reduce input filter components and accommodate multi-phase applications with multiple ICs. The LTC3876 utilizes a controlled on-time valley current mode architecture. Additional features include output voltage tracking, programmable soft start, R_{SENSE} or DCR current sense, remote VDDQ sensing and a power good output signal.

For optimal thermal performance, the LTC3876 is available in 38-pin thermally enhanced 5mm x 7mm QFN and TSSOP packages. This device is guaranteed for operation from -40° to 125°C . 1,000 piece pricing starts at \$2.94 each. For more information, visit www.linear.com/product/LTC3876


Photo Caption: Dual Buck Controller for DDR1/DDR2/DDR3 Standards

Summary of Features: LTC3876

- High Efficiency Synchronous Operation: up to 94%
- Dual Output Controller with up to 25A Current Capability
- Wide Input Operating Voltage: 4.5V to 38V
- VDDQ Output Voltage Range from 1V to 2.5V
- VTT Output Voltage Range from 0.5V to 1.25V
- $\pm 1.2\%$ Output Voltage Accuracy
- Selectable Fixed 200kHz to 2MHz Operating Frequency
- Synchronizable to an External Clock
- Programmable Soft Start or Tracking
- Selectable 0°/90°/180°/270° Phase Shift Between Channels
- Low Profile 38-Pin 5mm x 7mm QFN & TSSOP Packages

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, and μ Module[®] subsystems.

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