



## **15V, Dual 3A Monolithic Synchronous Step-Down Regulator Powers DDR1, DDR2 or DDR3 Memory**

MILPITAS, CA – June 29, 2011 – The [LTC3634](#) is a high efficiency, dual-channel monolithic synchronous step-down regulator from Linear Technology, which provides power supply and bus termination rails for DDR1, DDR2 and DDR3 SDRAM controllers. The LTC3634 operates from an input voltage from 3.6V to 15V, making it ideal for dual cell Li-Ion applications as well as 5V and 12V intermediate bus systems. The LTC3634 incorporates a unique constant frequency/controlled on-time, current mode architecture, which is ideal for powering DDR applications from a 12V input supply at high switching frequencies. Its termination voltage, VTT, is set to ½ of VDDQ down to 0.6V with accuracy of  $\pm 1.6\%$ . The combination of a monolithic design and switching frequencies as high as 4MHz, which enable the use of tiny, low cost capacitors and inductors, provides a very compact, high efficiency solution for DDR power applications.

Each channel of the LTC3634 uses internal switches with  $R_{DS(ON)}$  of only 65mOhms and 130mOhms to deliver efficiencies as high as 95%. The two channels run 180 degrees out of phase, minimizing the size of both input and output capacitance. An on-chip buffer capable of driving a 10mA load provides a low noise reference output (VTTR) also at  $V_{DDQ}/2$ . Additional features include power good voltage monitors, input overvoltage and overtemperature protection, and short circuit protection.

The LTC3634EUFD is available in a 4mm x 5mm QFN-28 whereas the LTC3634EFE is available in a 28-lead TSSOP package. Pricing starts at \$4.25 and \$4.40 each, respectively, in 1,000-piece quantities. Industrial grade versions, the LTC3634IUFD and LTC3634IFE, are guaranteed to operate over the -40°C to 125°C operating junction temperature range and are priced at \$4.72 and \$4.89 each, respectively, in 1,000-piece quantities. All versions are available from stock. For more information, visit [www.linear.com/product/LTC3634](http://www.linear.com/product/LTC3634)


**Photo Caption:** 15V, Dual 3A Monolithic Synchronous Step-Down Converter for DDR Memory Power

### Summary of Features: LTC3634

- 3.6V to 15V Input Voltage Range
- VDDQ, VTT, VTTR Outputs
- Up to  $\pm 3A$  Output Current
- Up to 95% Efficiency
- Selectable 90°/180° Phase Shift Between Channels
- Adjustable Switching Frequency: 500kHz to 4MHz
- 10mA Buffered VTTR = VDDQ/2 = VTT Reference
- $\pm 1.6\%$  Accurate VTTR at 0.75V
- Optimal VOUT Range: 0.6V to 3V
- Current Mode Operation for Excellent Line & Load Transient Response
- External Clock Synchronization
- Short-Circuit Protected
- Input Overvoltage & Overtemperature Protection
- Power Good Status Outputs
- Available in (4mm x 5mm) QFN-28 & Thermally Enhanced 28-Lead 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  $\mu$ Module<sup>®</sup> subsystems.

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