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8A, 18V Synchronous Step-Down Regulator Delivers 8A from 7mm x 8mm QFN

MILPITAS, CA – August 5, 2008 – The LTC3608 is a high efficiency, synchronous buck regulator that can deliver up to 8A of continuous output current at voltages as low as 0.6V. It operates from an input voltage range of 4V to 18V (20V ABS Max), making it ideal for applications with multicell Li-Ion, lead acid batteries or fixed voltage rails up to 15V. Its valley current control architecture delivers very low duty cycle operation at high frequencies with excellent transient response. The operating frequency is set by an external resistor. Switching frequencies of up to 1MHz allow the utilization of small, low cost ceramic capacitors and low profile inductors.

The LTC3608 uses internal switches with an $R_{DS(ON)}$ of only 10mOhms and 8mOhms to deliver efficiencies as high as 95%. The LTC3608 can be configured for discontinuous or forced continuous operation. Forced continuous operation reduces noise and RF interference while discontinuous mode provides high efficiency by reducing switching losses at light loads requiring only 900uA of quiescent current. Shut down quiescent current is only 15uA. Additional features include a Power Good voltage monitor, adjustable current limit, output overvoltage protection and programmable soft-start.

The LTC3608EWKG is available from stock in a 52-lead, 7mm x 8mm QFN package. Pricing starts at \$7.50 in 1,000-piece quantities. An industrial grade version, the LTC3608IWKG is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$8.63 in 1,000-piece quantities. All versions are available from stock.


Photo Caption: 8A Monolithic Synchronous Step-Down Regulator

Summary of Features: LTC3608 Output Current

- Wide V_{IN} Range = 4V to 18V
- Internal N-Channel MOSFETs
- True Current Mode Control
- Optimized for High Step-Down Ratios
- $t_{ON(MIN)} \leq 100\text{nsec}$
- Extremely Fast Transient Response
- Stable with Ceramic C_{OUT}
- $\pm 1\%$ 0.6V Voltage Reference
- Power Good Output Voltage Monitor
- Adjustable On-Time/Switching Frequency
- Adjustable Current Limit
- Programmable Soft-Start
- Output Overvoltage Protection
- Optional Short-Circuit Shutdown Timer
- Low Shutdown I_Q : 15uA
- Available in a 7mm \times 8mm 52-Pin QFN Package

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. For more information, visit www.linear.com.

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