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24V Input Synchronous Step-Down Regulator Delivers 12A from a 9mm x 9mm QFN

MILPITAS, CA – September 4, 2007 – Linear Technology announces the LTC3610, a high efficiency, synchronous buck regulator which can deliver up to 12A of continuous output current at voltages as low as 0.6V. It operates from an input voltage of 4V to 24V (28V ABS Max), making it ideal for applications with multicell Li-Ion, lead acid batteries or fixed voltage rails up to 24V. 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 1 MHz allow the utilization of small, low cost ceramic capacitors and low profile inductors.

The LTC3610 uses internal switches with an $R_{DS(ON)}$ of only 12mOhm and 6.5mOhm to deliver efficiencies as high as 95%. The LTC3610 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 while requiring only 900uA of quiescent current. No load quiescent current is only 15uA. Additional features include a Power Good voltage monitor, adjustable current limit, output overvoltage protection and programmable soft-start.

The LTC3610 is available from stock in a 64-lead, 9mm x 9mm QFN package. Pricing starts at \$8.50 in 1,000-piece quantities.


Photo Caption: 24V_{IN}, 12A Synchronous Buck Converter

Summary of Features: LTC3610

- 12A Output Current
- Wide V_{IN} Range = 4V to 24V (28V ABS Max)
- Internal N-Channel MOSFETs
- High Efficiency: Up to 95%
- True Current Mode Control
- Optimized for High Step-Down Ratios: t_{ON}(MIN) ≤100ns
- Extremely Fast Transient Response
- Stable with Ceramic C_{OUT}
- ±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 IQ: 15uA
- Available in a 9mm × 9mm 64-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, 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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