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2.5MHz, 40V Dual Step-Down DC/DC Converter Delivers 1.4A per Channel

MILPITAS, CA – February 21, 2007 – Linear Technology announces the LT3508 a dual channel current mode PWM step-down DC/DC converter with two internal 40V, 2A power switches packaged in a 24-lead 4mm x 4mm QFN or TSSOP-16E package. Each channel is capable of delivering 1.4A of output current with efficiencies up to 89%. Its wide input range of 3.7V to 36V makes it ideal for regulating power from a wide variety of sources, including unregulated wall transformers, 24V industrial supplies and automotive batteries. For automotive applications, the LT3508's minimum input voltage of 3.7V enables it to operate with sub 4V inputs, paramount for automotive "cold crank" requirements. Similarly, the device's 36V operating and 40V maximum capability enables it to withstand transients, common in load-dump conditions. Its 250kHz to 2.5MHz switching frequency is user programmable, enabling it to maximize efficiency while using tiny, low cost inductors and ceramic capacitors, resulting in low, predictable output ripple.

The LT3508's low V_{CESAT} (300mV at 1.4A) internal switches provide efficiencies up to 89%, minimizing thermal issues. Both of the LT3508's converters are synchronized to either a common external clock input or to its internal oscillator and maintain a 180° phase offset between channels to reduce input voltage ripple. An internal 0.80V reference enables sub 1V output voltages required to power the latest generation of low voltage DSPs and microcontrollers. Independent tracking, soft-start and Power-Good circuits ease supply sequencing. Low drop-out internal switches enable duty cycles to reach 98% while internal cycle-by-cycle current limit provides protection against shorted outputs. The low current (<2uA) shutdown offers extended run-time in battery-powered systems.

The LT3508EUF and LT3508EFE are both available from stock in either a thermally enhanced 4mm x 4mm QFN-24, or TSSOP-16E package, respectively. Pricing starts at \$3.35 each for the LT3508EUF and \$3.50 for the LT3508EFE in 1,000-piece quantities.

Photo Caption: 2.5MHz, 40V Dual Step-Down DC/DC Converter

Summary of Features: LT3508

- Wide Input Range: 3.7V to 36V (40V Maximum)
- Two 1.4A Output Switching Regulators with Internal Power Switches
- Adjustable 250kHz to 2.5MHz Switching Frequency
- Synchronizable over the Full Frequency Range
- Anti-Phase Switching Reduces Ripple
- Uses Small Inductors & Ceramic Capacitors
- Accurate Programmable Undervoltage Lockout
- Independent Tracking, SoftStart & Power Good Circuits Ease Supply Sequencing
- Output Adjustable Down to 800mV
- Small 4mm x 4mm 24-Pin QFN or 16-Pin Thermally Enhanced TSSOP Surface Mount Packages

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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