



Dual 2.2MHz, 36V Dual Step-Down DC/DC Converter Delivers 0.7A per Channel from a 3mm x 4mm DFN Package

MILPITAS, CA – February 9, 2009 – Linear Technology announces the LT3509, a dual channel current mode PWM step-down DC/DC converter with two internal 36V, 1A power switches packaged in a 14-lead 3mm x 4mm DFN or MSOP-16E package. Each channel is capable of delivering up to 700mA of output current with efficiencies up to 88%. Its wide input range of 3.6V to 36V, with transient protection to 60V 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 LT3509's minimum input voltage of 3.6V enables it to operate with sub-4V inputs paramount for automotive "cold crank" requirements. Similarly, the device's 36V continuous input capability with 60V transient protection enables it to withstand transients found in load-dump scenarios. The LT3509's 300kHz to 2.2MHz 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 LT3509's low V_{CESAT} (320mV @0.9A) internal switches offer efficiencies up to 88%, minimizing wasted heat. An internal 0.80V reference enables sub-1V output voltages required to power the latest generation of low voltage DSPs and microcontrollers. Low dropout internal switches enable duty cycles to reach 95% while internal cycle-by-cycle current limit provides protection against shorted outputs. The low current ($< 9\mu A$) shutdown offers extended run-time in battery-powered systems.

The LT3509EDE is available in a thermally enhanced 3mm x 4mm DFN-14 whereas the LT3509EMSE is available in a thermally enhanced MSOP-16E package. Pricing starts at \$2.95 and \$3.05 each, respectively. Industrial temperature grades, LT3509IDE and LT3509IMSE, which are tested and guaranteed to operate from a -40°C to 125°C operating junction temperature are also available and are priced at \$3.39 and \$3.51 each, respectively. All versions are available from stock. For more information, visit www.linear.com.

Photo Caption: 36V with 60V Transient Protection, 2.2MHz, Dual 0.7A (I_{OUT}) Step-Down Switching Regulator in 3mm × 4mm DFN

Summary of Features: LT3509

- Two 700mA Switching Regulators with Internal Power Switches
- Wide 3.6V to 36V Operating Range
- Over-Voltage Lockout Protects Circuit Through 60V Supply Transients
- Short Circuit Robust
- Low Dropout Voltage – 95% Maximum Duty Cycle
- Adjustable 300kHz to 2.2MHz Switching Frequency; Synchronizable over the Full Range
- Uses Small Inductors & Ceramic Capacitors
- Integrated Boost Diodes
- Internal Compensation
- Thermally Enhanced 14-Lead (3mm × 4mm) DFN & 16-Lead MSOP 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, 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.

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