



36V_{IN}, Triple, 2A+1A+ 1A (I_{OUT}) Step-Down Switching Regulator with 100% Duty Cycle Operation

MILPITAS, CA – August 15, 2013 – Linear Technology Corporation announces the [LT3514](#), a triple output, 36V step-down switching regulator with 100% duty cycle operation. The LT3514 delivers 2A of continuous output current from one channel and 1A each from the other two channels at voltages as low as 0.8V. The device's 3.2V to 36V (40V_{MAX}) input voltage range makes it ideal for automotive and industrial applications that require multiple outputs. The LT3514's unique design includes an onboard boost regulator, enabling each channel to operate at 100% duty cycle, even with input voltage as low as 3.2V. This architecture makes the LT3514 well suited for applications requiring continuous output regulation such as automotive cold-crank and stop-start scenarios.

The LT3514's switching frequency is user-programmable from 250kHz to 2.2MHz and is synchronizable throughout the range, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. The combination of its 28-lead 4mm x 5mm QFN package and high switching frequency keeps external inductors and capacitors small, providing a compact, thermally efficient footprint for multiple output applications.

The LT3514 utilizes one internal 3A switch and two 1.45A switches for the step-down conversion and a 220mA switch for the internal boost circuit, with the necessary oscillator, control and logic circuitry integrated into a single die. Special design techniques deliver efficiencies up to 88% over a wide input voltage range, and the LT3514's current mode topology

enables fast transient response and excellent loop stability. Anti-phase switching reduces input ripple and robust short-circuit protection enhances system reliability. Other features include output voltage tracking, programmable undervoltage lockout and a power good pin to indicate when all outputs are in regulation.

The LT3514 is available in thermally enhanced 4mm x 5mm QFN-28 and TSSOP-24 packages. The LT3514E is priced starting at \$3.50 each for 1,000-piece quantities. The LT3514I is tested and guaranteed to operate from a -40°C to 125°C junction temperature range and is priced starting at \$3.85 each for 1,000-piece quantities. Both versions are available from stock. For more information, visit www.linear.com/product/LT3514


Photo Caption: 36V, Triple 2A+ 1A + 1A (I_{OUT}), 2.2MHz Step-Down DC/DC Converter

Summary of Features: LT3514

- Wide Input Range: 3.2V to 36V (40V_{MAX})
- One 2A Output & Two 1A Outputs
- 100% Duty Cycle Operation
- Resistor-Programmed Constant Frequency
- Short-Circuit Robust
- Wide SYNC Range: 250kHz to 2.2MHz
- Anti-Phase Switching Reduces Ripple
- 800mV FB Voltage
- Independent Run/Soft-Start Pins
- Shutdown with UVLO
- Internal Compensation
- Thermal Shutdown
- Tiny 28-Lead (4mm × 5mm) Thermally Enhanced QFN & TSSOP-24 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 over 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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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