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75V Boost DC/DC Converter with Fixed Voltage Drop APD Current Monitor

MILPITAS, CA – February 18, 2009 – Linear Technology announces the LT3571, a fixed frequency, current mode step-up DC/DC converter with an integrated high-side avalanche photodiode (APD) current monitor. The device can deliver output voltages up to 75V from inputs ranging from 2.7V to 20V, making it ideal for a wide array of fiber optic applications. The LT3571 features a high-side fixed voltage drop APD current monitor, providing better than 10% relative accuracy over the -40°C to 125°C temperature range. The fixed 5V ($\pm 5\%$) drop across the current monitor is unique to the LT3571 and enables higher data bandwidths in many fiber optic applications. The power switch, Schottky diode and APD current monitor are integrated into a single IC that is packaged in a 3mm x 3mm QFN, providing a tiny solution footprint.

The LT3571's internal 75V, 350mA switch offers output voltages as high as 75V. Its switching frequency can be programmed between 250kHz and 2MHz, enabling the designer to optimize efficiency while minimizing the size of the external components. Constant frequency architecture is used to keep output ripple below 500uV_{PK-PK}, which is critical in most APD applications. To further reduce noise concerns, the LT3571 is externally synchronizable. The LT3571 combines a traditional voltage loop and a unique current loop design to operate as a constant current source or constant voltage source, providing both excellent transient response as well as APD protection. It is equipped with both a 1.222V internal reference and an auxiliary reference input (via the CNTRL pin), enabling the output voltage to be adjusted while the chip is operating without any polarity inversion. Other features include soft-start, internal compensation and thermal shutdown.

The LT3571EUD is available in a 3mm x 3mm QFN-16 and is priced at \$2.45 each in 1,000-piece quantities. An industrial grade version, the LT3571IUD, is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$2.72 each in 1,000-piece quantities. Both versions are available from stock. For more information, visit www.linear.com.


Photo Caption: 75V Boost Converter with APD Current Monitor

Summary of Features: LT3571

- High Output Voltage: Up to 75V
- Integrated Schottky Diode
- 75V, 350mA Internal Switch
- High Side Fixed Voltage Drop APD Current Monitor
- Adjustable Frequency: 250kHz to 2MHz
- Frequency Synchronization
- Wide V_{IN} Range: 2.7V to 20V
- Constant-Voltage and Constant-Current Regulation
- Programmable Current Limit Protection
- Surface Mount Components
- Low Shutdown Current <1uA
- Internal Soft-Start
- Internal Compensation
- CTRL Pin Allows Output Adjustment with No Polarity Inversion
- 3mm x 3mm 16-Lead 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.

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