



1.2A Overvoltage/Overcurrent Protector Isolates Sensitive Low Voltage Electronics from Input Power Surges

MILPITAS, CA – June 22, 2010 – Linear Technology Corporation introduces the [LTC4362](#), a 2.5V to 5.5V overvoltage and overcurrent protector designed to safeguard low voltage, portable electronics from damaging input voltage transients and current surges. Overvoltage events can occur due to power adapter failure or faults, or when hot-plugging an AC adapter into a device's power input. Inadvertently plugging the wrong power adapter into a device can potentially cause damage from overvoltage or negative supply voltage. The LTC4362 utilizes a 2% accurate 5.8V overvoltage threshold to detect an overvoltage event and responds quickly within 1 μ s (max) to isolate the downstream components from the input. Overvoltage protection of up to 28V is achieved with an internal, avalanche rated, low $R_{DS(ON)}$ MOSFET, and rides through inductive cable transients without requiring transient voltage suppressors (TVS) or other external components in most applications. In addition, the LTC4362 monitors the voltage drop across an internal current sense resistor to provide a 20% accurate, 1.5A overcurrent threshold. The LTC4362 is targeted for portable electronics with multiple power supply options, such as cell phones, MP3/MP4 players, digital cameras that charge via wall and car battery adapters and USB ports.

The LTC4362 controls an internal 40mOhm N-channel MOSFET so that under normal operation it provides a low loss path from the input to the load. Inrush current limiting is achieved with a controlled gate voltage slew rate. If the voltage at the input exceeds the

overvoltage threshold of 5.8V, the GATE is pulled low within 1us to protect the load. The LTC4362 features a soft shutdown controlled by the /ON pin and provides a gate drive output for an optional external P-channel MOSFET for reverse voltage protection. A power good output pin indicates gate turn on. The LTC4362 is available in two options; the LTC4362-1 latches off after an overcurrent event, whereas the LTC4362-2 performs an auto-retry following a 130ms delay. Following an overvoltage condition, both options automatically restart with a start-up delay.

Specified over the full commercial and industrial temperature ranges, the LTC4362 is offered in 8-pin, 2mm x 3mm DFN packages. Evaluation boards and samples are available online. The LTC4362 is priced at \$1.60 each in 1,000-piece quantities, and is available today in production. For more information, visit www.linear.com/pr/4362.


Photo Caption: 20V Hot-Plug into the LTC4362

Summary of Features: LTC4362

- 2.5V to 5.5V Operation
- Overvoltage Protection Up to 28V
- Internal 40mOhm N-Channel MOSFET & 31mOhm R_{SENSE}
- Avalanche Rated MOSFET Requires No Input Capacitor or TVS for Most Applications
- <1us Overvoltage Turn-Off, Gentle Shutdown
- 2% Accurate 5.8V Overvoltage Threshold
- 20% Accurate 1.5A Overcurrent Threshold
- Input Withstands Up to ± 25 kV HBM ESD with 1uF C_{OUT}
- Controlled Power-Up dV/dt Limits Inrush Current
- Reverse Voltage Protection
- Power Good Output
- Low Current Shutdown (1.5uA)
- Latchoff (LTC4362-1) or Auto-Retry (LTC4362-2) After Overcurrent
- Available in 8-Pin (2mm x 3mm) DFN 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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