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## **Overvoltage/Overcurrent Protection Controller Safeguards Sensitive Low Voltage Electronics from Input Power Surges**

MILPITAS, CA – April 21, 2010 – Linear Technology Corporation introduces the LTC4361, a 2.5V to 5.5V overvoltage and overcurrent protection controller 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 the power input of the device. The wrong power adapter can also inadvertently be plugged into a device, potentially causing damage from overvoltage or negative supply voltage.

The LTC4361 utilizes a 2% accurate 5.8V overvoltage threshold to detect an overvoltage event and responds quickly within 1 $\mu$ s (max) to isolate the downstream components from the input.

Overvoltage protection of up to 80V can be achieved with this simple IC/MOSFET solution without the need of additional external components such as capacitors or transorbs at the input.

In addition, the LTC4361 monitors voltage drop across a current sense resistor at the input of the circuit to protect against overcurrent faults. The LTC4361 is targeted for mobile electronics with multiple power supply options like cell phones, MP3/MP4 players, digital cameras that charge via wall and car battery adapters and USB ports.

The LTC4361 controls a low cost external 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 by controlling the voltage slew rate of the gate. If the voltage at the input exceeds the overvoltage threshold of 5.8V, the GATE is pulled low within 1 $\mu$ s to protect the load. While the

IC operates from supplies between 2.5V and 5.5V, the input pins can withstand 80V transients or DC overvoltages. The LTC4361 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. Following an overvoltage condition, the LTC4361 automatically restarts with a start-up delay. The LTC4361 is available in two options; the LTC4361-1 latches off after an overcurrent event, where as the LTC4361-2 performs an auto-retry following a 130ms delay.

The new LTC4360 overvoltage protection controller is recommended for applications that do not require overcurrent protection. While offering many of the same features as the LTC4361, the two LTC4360 versions are differentiated by pin functions. The LTC4360-1 features soft shutdown control with low shutdown current of 1.5uA, while the LTC4360-2 can drive an optional external P-channel MOSFET for negative voltage protection.

Specified over the full commercial and industrial temperature ranges, the LTC4361 is offered in 8-lead (2mm x 2mm) DFN and SOT-23 packages, and the LTC4360 is offered in a tiny 8-lead SC70 package. Evaluation boards and samples are available online. The LTC4360 is priced at \$1.15 each and the LTC4361 is priced at \$1.40 each, respectively in 1,000-piece quantities. Both devices are available today in production quantities. For more information, visit [www.linear.com](http://www.linear.com).


## **Photo Caption: Simplified Overvoltage & Overcurrent Protection**

### **Summary of Features: LTC4361**

- 2.5V to 5.5V Operation
- Overvoltage Protection Up to 80V
- No Input Capacitor or TVS required for Most Applications
- 2% Accurate 5.8V Overvoltage Threshold
- 10% Accurate 50mV Overcurrent Circuit Breaker
- Controls N-Channel MOSFET
- <1us Overvoltage and Overcurrent Turn-Off, Gentle Shutdown
- Adjustable Power-Up dV/dt Limits Inrush Current
- Reverse Voltage Protection
- Power Good Output
- Low Current Shutdown (1.5uA)
- Latchoff (LTC4361-1) or Auto-Retry (LTC4361-2) After Overcurrent
- Available in 8-Lead ThinSOT™ & 8-Lead (2mm x 2mm) 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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