



Surge Stopper Integrates Ideal Diode for Comprehensive Protection Against Transient Voltages, Currents & Reverse Inputs & Outputs

MILPITAS, CA – July 23, 2012 – Linear Technology Corporation introduces the [LTC4364](#), a surge stopper with ideal diode, providing compact and low-loss protection for 4V to 80V electronics in automotive, avionics and industrial systems. The surge stopper shields downstream electronics from input overvoltages and overcurrent, enabling continuous operation through transient surges. Overcurrent limiting protects the system and supply from short-circuits at the load. Unique to the LTC4364 is ideal diode control, which replaces a Schottky diode in the power path with a low loss N-channel MOSFET. The ideal diode, along with a robust front-end, protects the load from a reversed input down to -40V and maintains the output voltage during an input brownout.

During an input voltage surge, such as automotive load dump, the LTC4364 drops the excess voltage across an external MOSFET while regulating the output to an adjustable safe voltage. This enables the use of lower voltage rated electronics downstream. Similarly, during a current surge, the LTC4364 regulates the forward path to a current limit set by a sense resistor. For persistent overvoltage or overcurrent conditions, a V_{DS} -accelerated timer with early warning indicator ensures safe shutdown of the MOSFET.

The LTC4364's wide operating range maintains operation in automotive cold crank when the battery voltage could dip down to 4V. With a simple input clamp, the device can handle transient surges beyond 100V and can even survive -20V at the output. The latter, along with

diode blocking and overcurrent limiting, makes the LTC4364 a complete solution for protecting output ports. Adjustable input undervoltage and overvoltage thresholds block start-up for out-of-range voltages, avoiding deeply discharged batteries and auto-retry into a fault condition. A low 370 μ A operating and 10 μ A shutdown current prolongs battery life. The device can also be used for inrush current control, providing HotSwap™ capabilities.

The LTC4364 is available in two options. After a fault, the LTC4364-1 latches off the pass transistor, whereas the LTC4364-2 enables a 0.1% duty cycle auto-retry. Specified over the full commercial, industrial and automotive temperature ranges, the LTC4364 is offered in 14-pin DFN (4mm x 3mm), and 16-lead MSOP and SO packages. Pricing begins at \$3.45 each for 1,000-piece quantities and the device is available today in production quantities. Evaluation circuit boards are available online or from your local sales office. For more information, visit www.linear.com/product/LTC4364


Photo Caption: Surge Stopper with Ideal Diode IC Handles Input Overvoltages & Reversal, Output Short-Circuit & Reversal

Summary of Features: LTC4364

- Wide Operating Range: 4V to 80V
- Withstands Surges Over 80V with V_{CC} Clamp
- Adjustable Output Clamp Voltage
- Ideal Diode Enables Output Holdup During Input Brownout
- Protects Against Reversed Input to -40V, Reversed Output to -20V
- Overcurrent Protection
- Output Port Protection
- Low 10 μ A Shutdown Current at 12V
- Adjustable Timer to Ride Through Transient Faults
- 0.1% Retry Duty Cycle During Faults (LTC4364-2)
- 14-Pin 4mm x 3mm DFN, 16-Lead MSOP & SO 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 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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