



## **High Voltage Surge Stopper with Current Limit Shields Sensitive Electronics from Transients Beyond 100V**

MILPITAS, CA – January 16, 2012 – Linear Technology Corporation introduces the [LT4363](#), an overvoltage protection controller that provides overvoltage and overcurrent protection to high-availability electronic systems. Supply voltages surge whenever currents flowing through long inductive power buses change abruptly. Also, automotive batteries experience a condition known as load-dump, where the voltage can stay elevated for many milliseconds. Traditional protection circuitry relies on bulky inductors, capacitors, fuses, and transient voltage suppressors. Instead, the LT4363 creates a robust, adaptable, and space-efficient design with simple control of an N-channel MOSFET. Only the controller and the MOSFET suffer the high voltage surge; downstream components can afford lower voltage ratings, thereby saving costs.

The LT4363 controller builds on Linear's popular first-generation LT4356 device by extending overvoltage protection capabilities beyond 100V without sacrificing overcurrent protection. The LTC4363 reacts quickly to overcurrent and short-circuit faults at the load, limiting the current to a safe value set by a sense resistor.

Armed with a 100V maximum rating and operational capability down to 4V (cold-crank), the LT4363 makes for an ideal barrier against badly behaving supplies. A simple clamp on the controller supply extends protection beyond the native 100V. It even survives reversed battery connections to -60V. During voltage surges, the output is regulated to a voltage set by a resistive divider, allowing the load to operate safely and smoothly through transient events. Overvoltage

and undervoltage comparator inputs ensure that the LT4363 remains off outside a user-defined voltage range. To limit the thermal stress on the power MOSFET, the LT4363 uses a  $V_{DS}$ -accelerated fault timer. If the fault persists, a warning is issued before the MOSFET is shut off. By limiting the MOSFET gate slew-rate with a resistive-capacitive (RC) network, the controller can be adapted for inrush control in Hot Swap™ applications. In the shutdown state the LT4363 sips just 7µA of supply current, preserving battery life. A built-in thermal shutdown occurs around 150°C.

The LT4363 is available in two options: the LT4363-1 latches off after a fault, whereas the LT4363-2 will retry after a long cool-down period. Specified over the full commercial and industrial temperature ranges, the LT4363 is offered in 12-pin DFN (4mm x 3mm) and MSOP packages, and a 16-pin SO package with enhanced high-voltage pin spacing. Pricing begins at \$2.48 each for 1,000-piece quantities and the device is now available in production quantities.

For more information, visit [www.linear.com/product/LT4363](http://www.linear.com/product/LT4363)

**Photo Caption:** Overvoltage & Overcurrent Protection IC Suppresses High Voltage Surges

### Summary of Features: LT4363

- Withstands Surges Over 100V with  $V_{cc}$  Clamp
- Wide Operating Voltage Range: 4V to 80V
- Adjustable Output Clamp Voltage
- Fast Overcurrent Limit: Less Than 5µs
- Reverse Input Protection to -60V
- Adjustable UV/OV Comparator Thresholds
- Low 7µA Shutdown Current
- Shutdown Pin Withstands -60V to 100V
- Adjustable Fault Timer
- Controls N-Channel MOSFET
- Less Than 1% Retry Duty Cycle During Faults (LT4363-2)
- 12-Lead MSOP, (4mm x 3mm) DFN & 16-Lead 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, and  $\mu$ Module<sup>®</sup> subsystems.

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