



News Release | www.linear.com

Overvoltage Protection Regulator & Inrush Current Limiter Ensures Reliable Operation During Power Surges

MILPITAS, CA – July 9, 2007 – Linear Technology Corporation introduces the LT4356, an overvoltage protection regulator, with overcurrent protection and inrush current limiting for high availability systems. In applications where electronic systems must cope with high voltage surges of short duration, such as load dump in automobiles, the LT4356 provides solid front-end protection for valuable, safety critical downstream components. The wide input operating range of 4V to 80V enables continuous operation during cold crank conditions where the battery voltage can be as low as 4V. With its high input voltage rating, the LT4356 can handle transient voltages of 100V and higher, and provides reverse input protection to -30V without damage to itself or the load. The LT4356 lends itself well to automotive, industrial and avionics applications, as well as positive high voltage distributed power Hot Swap™ systems.

The LT4356 replaces complicated and bulky protection circuitry with a simple IC and FET solution. It provides a well-regulated output during an overvoltage transient, allowing continued operation through the event. Front-end protection permits the use of lower cost DC/DC regulators downstream. During an overvoltage event, the LT4356 regulates the output to a user-defined voltage by controlling the gate of an external N-Channel MOSFET. Inrush current limiting is achieved by controlling the voltage slew rate of the gate. The LT4356 monitors voltage drop across a current sense resistor at the input of the circuit to protect against overcurrent faults. For either an overvoltage or overcurrent fault condition, an integrated fault timer ensures safe shutdown of the MOSFET if the fault persists.

An auxiliary amplifier is provided for additional design flexibility. It may be used as a voltage detection comparator or a low drop out (LDO) linear regulator controller. The LT4356 is available in two options defined by the function of the shutdown pin. For the LT4356-1,

shutdown of the IC reduces the quiescent current to 5uA. For the LT4356-2, the auxiliary amplifier and internal reference remain active to ensure a keep-alive supply voltage for vital functions while the main system is shutdown. Quiescent current is reduced to 50uA during shutdown.

Specified over the full commercial, industrial and automotive temperature ranges, the LT4356 is offered in (4mm x 3mm) 12-pin DFN and 10-pin MSOP packages. Evaluation kits are available from the factory. Pricing begins at \$1.98 each for 1,000-piece quantities and the device is available today in production quantities.

Photo Caption: Simplified Overvoltage and Overcurrent Protection

Summary of Features: LT4356

- Wide Operating Range: 4V to 80V
- Adjustable Output Clamp Voltage
- Inrush Current Limiting
- Reverse Input Protection to -30V
- Adjustable Fault Timer
- Fault Output Indication
- Spare Amplifier for Level Detection Comparator or Linear Regulator Controller
- Overcurrent Protection
- -40°C to +125 °C Operation
- 4mm x 3mm DFN and MSOP 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, 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. For more information, visit www.linear.com

LT, LTC, LTM and  are registered trademarks and Hot Swap is a trademark of Linear Technology Corp.

Press Contacts:

John Hamburger, Director Marketing Communications

jhamburger@linear.com

Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager

ddickinson@linear.com

Tel: 408-432-1900 ext 2233