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## **Integrated 5Amp MOSFET & R<sub>SENSE</sub> Provides Highly Integrated Hot Swap Solution**

MILPITAS, CA – June 30, 2010 – Linear Technology Corporation introduces the [LTC4219](#) 5A Hot Swap™ controller for protecting low power boards with load supply voltages ranging from 2.9V to 15V. The LTC4219 allows a board to be safely inserted and removed from a live backplane by limiting the amount of inrush current to the load supply during power up. Hot Swap controllers typically call for a number of supporting components. However, the LTC4219 integrates a power MOSFET and sense resistor in its power path to limit inrush current, reducing the number of external components required. The device's internal dV/dt circuit means there is no need for an external gate capacitor. An adjustable current limit allows users to vary the current limit threshold under different loading conditions, for example in disk drive spin-up to normal operation. This high level of integration, packaged in a tiny DFN, makes the LTC4219 a convenient Hot Swap solution in space-constrained applications.

The LTC4219 is suitable for a wide range of RAID, server, telecom and industrial applications, especially in compact boards utilizing technologies like Fibre Channel where power is typically limited to less than 25W due to their small size and inability to dissipate large amounts of heat. The LTC4219 was designed with these considerations in mind. During start-up, inrush currents are controlled by limiting the gate ramp rate to a safe 0.3V/ms. Load current is monitored using the voltage sensed across the internal 7.5mOhm sense resistor and adjusting the internal 33mOhm MOSFET gate-to-source voltage accordingly. A separate I<sub>SET</sub> pin

enables adjustment of the 10% accurate (5A) current limit threshold during start-up and normal operation as needed. In addition, current foldback and power-good circuitry ensure that the switch is protected from excessive load current and indicate whether or not healthy power conditions are maintained. The LTC4219 also features current, temperature and fault outputs, as well as an adjustable current limit timer.

The LTC4219 is available as a dedicated 12V (LTC4219-12) or 5V (LTC4219-5) version, which contain preset 12V/5V-specific thresholds. Both devices are offered in commercial and industrial operating temperature grades. The LTC4219 is available in a small, RoHS-compliant, 16-pin 5mm x 3mm DFN package and priced starting at \$3.35 each in 1,000 piece quantities. Please visit [www.linear.com/pr/4219](http://www.linear.com/pr/4219) for more product selection and information.


**Photo Caption:** 5A Hot Swap™ Controller with Integrated Power MOSFET & Sense Resistor

### Summary of Features: LTC4219

- Small Footprint
- 33mOhm MOSFET with R<sub>SENSE</sub>
- Available in Preset 12V & 5V Versions
- Adjustable, 10% Accurate (5A) Current limit
- Current & Temperature Monitor Outputs
- Overtemperature Protection
- Adjustable Current Limit Timer Before Fault
- Power Good & Fault Outputs
- Adjustable Inrush Current Control
- Available in 16-Lead 5mm 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<sup>®</sup> 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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