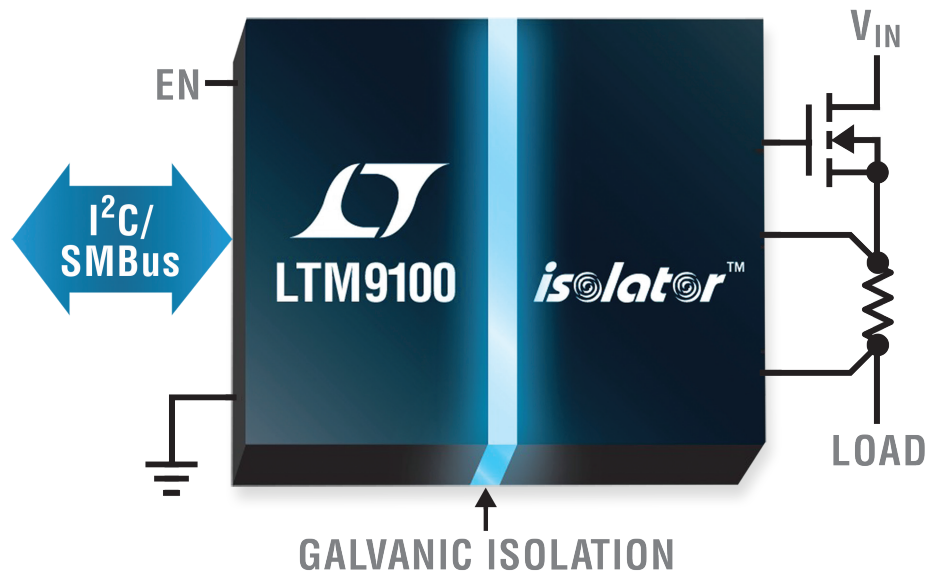


5kV_{RMS} Isolated Switch Controller with Telemetry



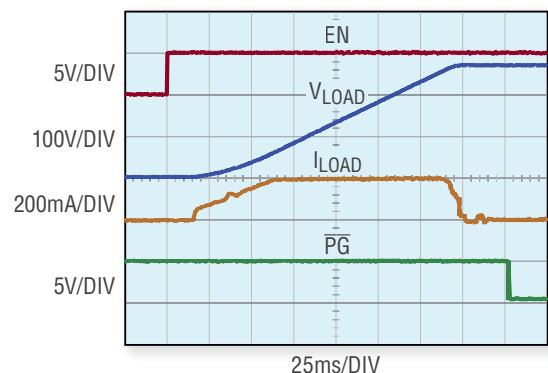
Adjustable Turn-On Ramp Rate, Circuit Breaker and 10-Bit ADC Monitoring

The LTM®9100 μ Module® is an all-in-one solution for controlling, protecting, and monitoring high voltage power supplies up to 1000V_{DC}. A 5kV_{RMS} galvanic isolation barrier separates the digital interface from the switch controller, driving an external N-channel MOSFET or IGBT switch. Isolated digital measurements of load current, bus voltage, and temperature are accessed via the I²C/SMBus interface, enabling power and energy monitoring of the high voltage bus. The LTM9100 saves design time, certification effort, and board area by wrapping all the needed functionality, including digital telemetry and isolated power, in a compact BGA package.

Features

- Controls N-Channel MOSFET or IGBT Switch
- Galvanically Isolated Switch Control
 - 5kV_{RMS} for One Minute (UL 1577 Recognition Pending)
 - 690V_{RMS} (1000V_{DC}) Maximum Continuous Working Voltage
 - $\geq 30\text{kV}/\mu\text{s}$ Common Mode Transient Immunity
 - $\pm 20\text{kV}$ HBM ESD Across Barrier
- 10-Bit ADC Measures Load Current and Two Voltage Inputs
- I²C/SMBus Interface for Configuration and Data Readback
- Integrated Isolated Power Supply
- 22mm \times 9mm \times 5.16mm BGA Package with 14.6mm Creepage

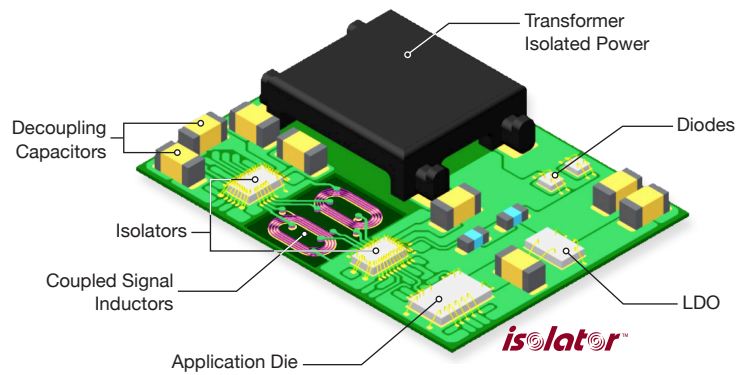
270V Load Soft-Start



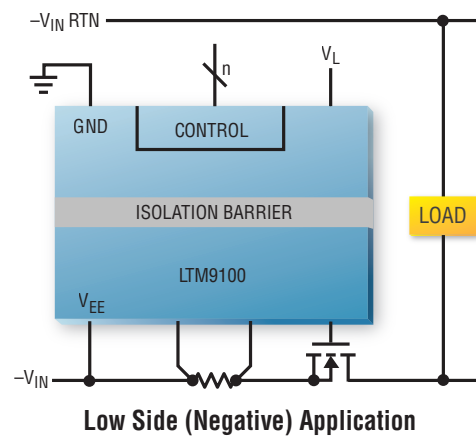
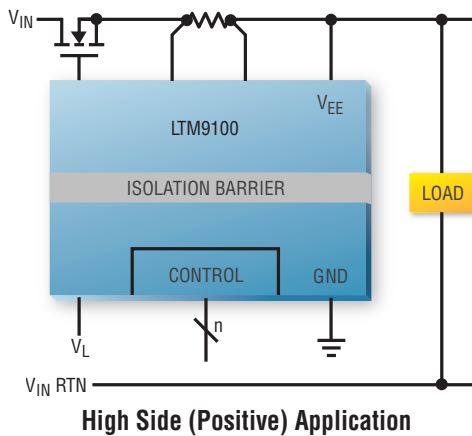
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Isolator μ Module Technology

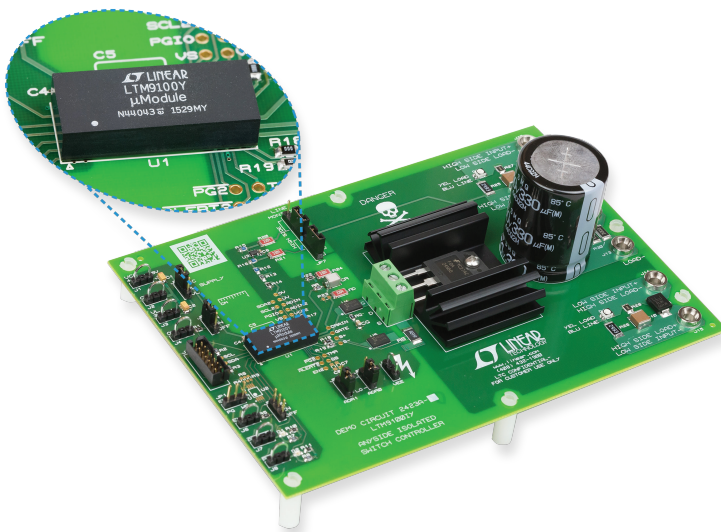
To achieve 5000V_{RMS} isolation, the LTM9100 utilizes Isolator μ Module technology, which uses coupled-signal inductors embedded in the μ Module substrate. This technique ensures consistent ruggedness and reliability, and will be recognized by the UL 1577 standard to guarantee a robust isolation barrier. The μ Module package integrates several technologies to deliver a cost-effective, advanced solution that minimizes board space and improves electrical and thermal performance.



Flexible AnySide™ Configuration



Due to its isolated nature, the LTM9100 is easily configured for high side, low side (ground return) and floating applications. Inrush current is minimized by soft-starting the load, and the supply is protected from overload and short-circuits with a current-limited circuit breaker. The LTM9100 is versatile enough to control inrush current not just in hot-swappable cards, but also in AC transformers, motor drives and inductive loads.



DC2423 Demo Board

Demonstration board DC2423 showcases the LTM9100 in either a typical 48V application (–A option) or in a high voltage 380V application (–B). The board may be configured for either high side or low side operation, dependent on the connection of external supply and load. The MOSFET is easily exchanged or replaced due to screw terminal block mounting. DC2423 may be controlled with individual signals or by computer using the QuikEval™ system or Linduino® code.