The **LTM®9100 µModule** 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
  - ≥ 30kV/µs Common Mode Transient Immunity
  - ±20kV 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 × 9mm × 5.16mm BGA Package with 14.6mm Creepage

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![270V Load Soft-Start](image-url)
Isolator µModule Technology

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

Flexible Any-side™ 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.