



Isolated Anyside Switch Controller Protects & Monitors Up to 1000V_{DC} Power Supplies

MILPITAS, CA – February 27, 2017 – Linear Technology Corporation introduces the [LTM9100](#) μ Module[®] (micromodule), an all-in-one Isolated Anyside[™] switch controller that protects and monitors high voltage DC power supplies up to 1000V. High voltage supplies used in industrial, datacom, avionic and medical applications require a controlled turn-on, with isolation needed for control circuit protection, operator safety and breaking ground paths. Alternative relay-based or discrete solutions are bulky, complex, component-intensive and lack safety certifications. The innovative LTM9100 saves design time, certification effort and board area by wrapping all the needed functionality, including isolated power and digital telemetry, in a compact BGA package.

A 5kV_{RMS} galvanic isolation barrier inside the LTM9100 separates the digital interface from the switch controller, driving an external N-channel MOSFET or IGBT switch. To guarantee a robust isolation barrier, the controller is production-tested to 6kV_{RMS} and will be recognized by the component-level UL 1577 standard, saving months of certification time for the end equipment manufacturer. 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.

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 in hot-swappable cards, AC transformers, motor drives and inductive loads. Adjustable undervoltage and overvoltage lockout thresholds ensure that the load operates only when the input supply is in its valid range. A fully integrated DC/DC converter, including the transformer, powers the isolated switch control side.

Specified over the –40°C to 105°C temperature range, the LTM9100 is offered in a 22mm x 9mm x 5.16mm BGA package, with 14.6mm of creepage distance between the logic side and the isolated side. 1,000-piece pricing starts at \$19.45 each. Device samples and

evaluation circuit boards are available online or from your local Linear Technology sales office. For more information, visit www.linear.com/product/LTM9100.

Photo Caption: 5kV_{RMS} Isolated Switch Controller


Summary of Features: LTM9100

- Controls N-Channel MOSFET or IGBT Switch
- Galvanically Isolated Switch Control
 - 5kV_{RMS} for 1 Minute (UL 1577 Recognition Pending)
 - 690V_{RMS} (1000V_{DC}) Continuous Working Voltage
 - > 30kV/μs Common Mode Transient Immunity
 - ±20kV HBM ESD Across Barrier
- 10-Bit ADC Measures Load Current & Two Voltage Inputs
- I²C/SMBus Interface for Configuration & Data Readback
- Adjustable Soft-Start Rate & Circuit Breaker Threshold
- Internal Isolated DC/DC Power Supply
- Undervoltage & Overvoltage Lockout
- Independent 3V to 5.5V Logic Supply
- Low < 10μA Shutdown Mode
- Fault Alert & Power Good Outputs
- 22mm x 9mm x 5.16mm BGA Package with 14.6mm Creepage

Pricing shown is for budgetary use only and may differ due to local duties, taxes, fees and exchange rates.

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 over 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, μModule[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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