

PRODUCT BRIEF

MM9105

MM9105-AC: 277V / 10A SPST Power Relay Prototype

MM9105-DC: 60V / 10A SPST Power Relay Prototype

The Menlo Microsystems MM9105, normally open power relay utilizes Menlo's Ideal Switch™ fabrication process and applies it to AC and DC power relay applications. The MM9105 allows customers to evaluate Menlo's Ideal Switch technology for power applications. It is intended for evaluation and prototyping purposes and is not qualified for high volume production.

The MM9105 utilizes small MOSFET devices in parallel with a high voltage MEMS relay to ensure zero-volt conditions across the relay during switch transitions (opening or closing). The parallel MOSFETs conduct only during switch transitions so that applications benefit from the exceptionally low on resistance, off-state capacitance and leakage, and the high reliability of Menlo's Ideal Switch technology. Galvanic isolation is assured by isolation transformers between the control and the power sections.

FEATURES

- Rated Voltage: 277 VAC 10A/60 VDC 10A (Scalable to kV)
- Rated Carry Current: 10A (Scalable to 100A)
- On Resistance: 50mΩ typical (scalable to <5mΩ)
- Galvanic Isolation
- Control Input Current: <1.0 mA
- High Reliability > 3 Billion cycles
- Compact 66mm x 56mm x 12mm

APPLICATIONS

- AC/DC Power Distribution & Controls
- Mini-circuit breaker, protection

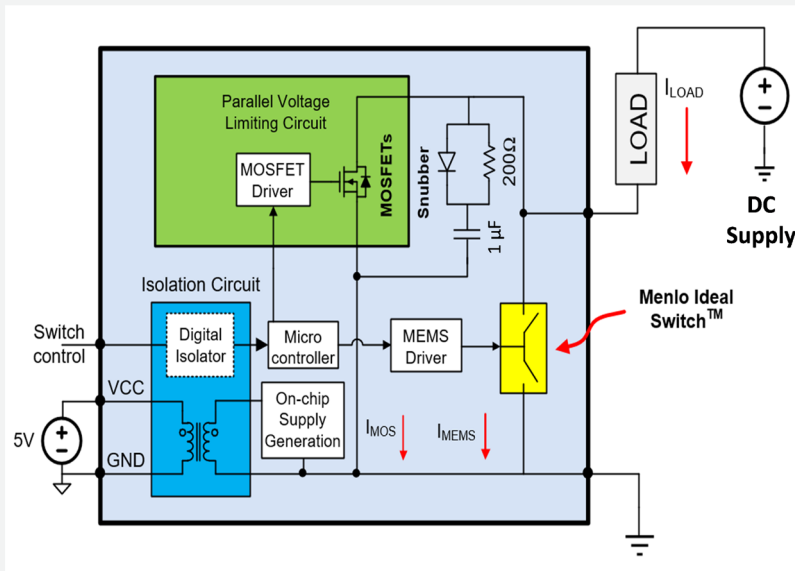
MARKETS

- Home, Industrial Automation, Lighting
- Battery Management, Charging
- Automotive
- UPS, Solar, PV

VERSIONS AVAILABLE

- AC Relay – MM9105-AC
- DC Relay – MM9105-DC

FIG. 1 MM9105-DC Relay

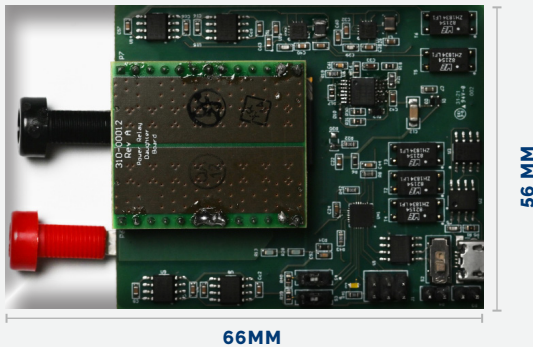


DESIGN ADVANTAGES

- 99% reduction in size and weight compared to EMR or SSR power relay solutions
- Fast switching (<20 us) and zero-crossing switching (AC) options
- Long-life actuator, for billions of switching operations
- Ultra-low loss down to 5mΩ, for superior thermal performance in high current applications
- Integrated smart controls for overcurrent, overvoltage protections
- Scalable architectures to 100 A and > 1000 V

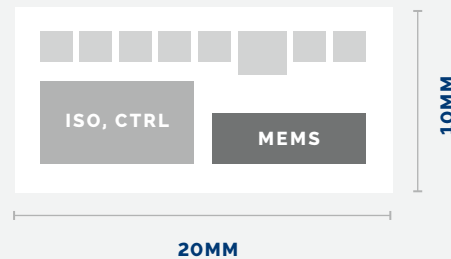
FIG. 2 Future Integration Path

TODAY
SMART POWER RELAY PROTOTYPE



- 8 parallel by 2 series (16 total) switch configurations per relay
- 32 parallel contacts per switch
- 32x8 = 256 parallel contacts in total
- Ron= 50mΩ, 10A

FUTURE
SMART POWER RELAY PRODUCT
SURFACE MOUNT MODULE



- Multiple switches + integrated controller
- 400 contacts/switch, 10A/switch
- 1000+ contacts in total
- Ron < 5mΩ, 10A to 100A, to 1000V total