VIPOWER M0-9

Smart high-side switches with 24-bit SPI interface

Intelligent, fully programmable high-side drivers with digital current sensing and diagnostic capabilities enhance automotive resilience

Our VIPower M0-9 high-side switches with a 24-bit SPI interface are specifically engineered to align with the evolving zonal architectures of smart vehicles, ensuring smooth integration into next-generation automotive designs.

These devices offer a range of advanced features, including an analog-to-digital converter (ADC), a sophisticated pulse width modulation (PWM) engine, an innovative priority manager, and a serial peripheral interface (SPI). All these capabilities are housed in a cost-effective quad flat no-leads (QFN)

KEY FEATURES
- 24-bit, 4-wire SPI interface
- 10-bit ADC with high current accuracy
- 10-bit PWM engine
- Priority management unit
- Advanced Limp Home functions with two OTP programmable direct inputs
- Deep cold cranking capability
- AEC-Q100 qualified
- AUTOSAR compliant

KEY BENEFITS
- Reduced PCB space
- Cost-effective system design
- Reduced MCU workload
- Reduced MCU resources

(I/O and ADC)
- MCU independent software
- Enhanced diagnostics

KEY APPLICATIONS
- Body control modules (BCM)
- Power distribution
- Lighting (LED and conventional)

Strengthening innovation in smart driving

Leveraging the latest VIPower M0-9 technological innovations, this series showcases enhanced devices equipped to manage the increased data volumes required by the growing complexity of advanced driver assistance systems (ADAS) and autonomous driving functions.

These devices are tailored for high-side connections in systems powered by a 12V battery, streamlining the design of electronic control units (ECUs) for both hardware and software, and bolstering system reliability.

Furthermore, they facilitate AUTOSAR compliance by including a sophisticated driver mechanism that functions autonomously from the application, thereby simplifying the software development process.

Development resources for an optimized design cycle

Motherboard

The backbone of the development environment, the SPC582B evaluation board (EV-SPC582B) includes dedicated connectors for VIPower M0-9 Easyboards and is Arduino compatible. Free ready-to-run application firmware examples are also available to support quick evaluation and development.
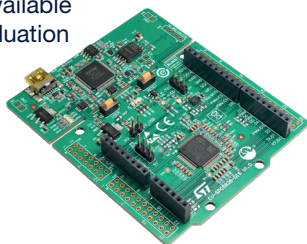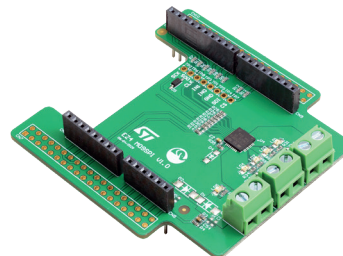
GUI

User-friendly graphical user interface (STSW-EV-M09SPI) for VIPower M0-9 evaluation boards lets you easily set and test device parameters.

Easyboard

Low-cost Easyboard concept lets you evaluate products without committing to the expenses, time, and resources typically required to design a customized circuit board.

Simulation tool

TwisterSIM is a unique electro-thermal simulator that shortens the design cycle by enabling complex engineering evaluation. It includes an interactive selector for finding the suitable HSDs in few clicks based on load compatibility drivers; fault condition impact analysis; diagnostic behavior analysis dynamic thermal performance, and more.

VIPower M0-9 SPI portfolio

Table Header	Package	Channels	On-state resistance $R_{DS(ON)}$	Reverse ON	Adjustable slew rate	Ready-to-use Easyboards
VN9D5D20FN	QFN (6 x 6 mm)	4	2x6.7 mΩ + 2x20 mΩ	N	Yes	EV-VN9D5D20FN
VN9D5D20F		4	2x6.7 mΩ + 2x20 mΩ	Y		EV-VN9D5D20F
VN9D7D20F		4	2x8.4 mΩ + 2x21.6 mΩ	Y		EV-VN9D7D20F
VN9D30Q100F		6	2x33 mΩ + 4x90 mΩ	N		EV-VN9D30Q100F
VN9Q25D70F		6	4x27 mΩ + 2x70 mΩ	Y		EV-VN9Q25D70F
VN9E30F		6	6x30 mΩ	Y		EV-VN9E30F