

Intelligent automotive high-side driver from STMicroelectronics powers and protects during severe voltage transients

Meets car industry's stringent quality standard for electrical and electronic components

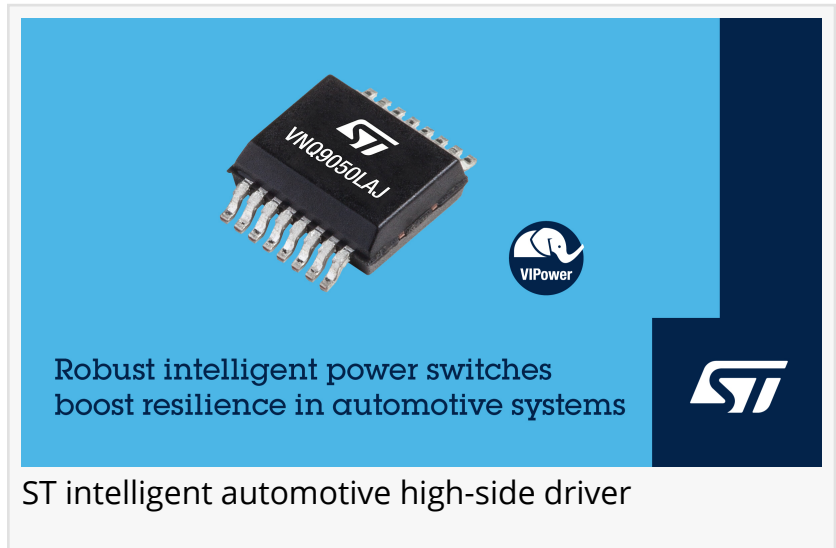
GENEVA, SWITZERLAND, February 16, 2026 /EINPresswire.com/ -- With 4V minimum operating voltage, STMicroelectronics' [VNQ9050LAJ](#) 4-channel automotive high-side driver powers through disturbances including extreme cold cranking operation down to 2.7V, boosting vehicle reliability and ensuring superior user experiences.

This resilience when exposed to severe transients meets the latest version of LV124, the automotive industry's stringent quality standard for electrical and electronic components.

Designed to power 12V ground-connected loads, the VNQ9050LAJ is compatible with 3V and 5V logic signals. Built with ST's latest-generation VIPower-M09 technology, the driver has typical on-resistance as low as 50Ω to help boost efficiency and save energy.

As an intelligent power switch, the VNQ9050LAJ brings further innovations to protect resistive, capacitive, and inductive loads. These include high-precision load-current sensing by implementing an on-chip current-mirror circuit with a sense-FET that closely tracks the main power-FET parameters. The current mirror is connected to an external pin that permits connecting a resistor to convert the sensed current into a voltage for continuous load monitoring and detection of abnormal conditions.

The current mirror's high accuracy permits rich current-sense diagnostic functions, including analog feedback of load current, overload and short-to-ground or power-limitation alerts, thermal-shutdown indication, output short-to-VCC detection, and OFF-state open-load detection. The driver has a sense-enable pin that lets similar devices share the external sense resistor to minimize the bill of materials (BOM).



The VNQ9050LAJ's sensing and protection capabilities handle exceptional voltages and temperatures. The device has an overvoltage clamp, thermal-transient limiting, and a configurable latch-off on overtemperature or power limitation with dedicated fault reset pin. There is also electrostatic discharge protection, loss of ground and loss of VCC protection, and reverse-battery protection.

The VNQ9050LAJ is in production now and available in a thermally enhanced Power-SSO16 package. Pricing starts at \$1.09 for orders of 1000 pieces.

Please visit www.st.com/vnq9050laj for more information.

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