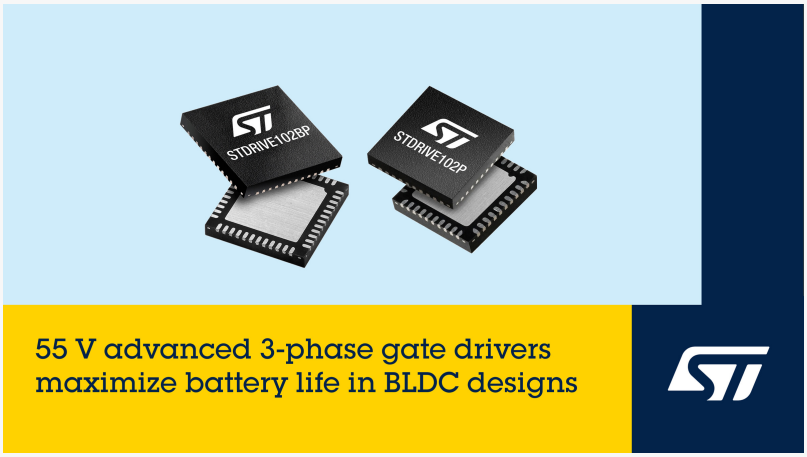
STMicroelectronics’ new gate drivers boost economy, performance, and efficiency in consumer and industrial products

GENEVA, SWITZERLAND, May 19, 2026 /EINPresswire.com/ -- STMicroelectronics has introduced new STDRIVE102 gate-driver ICs for three-phase brushless motors, adding the STDRIVE102P and STDRIVE102BP that feature an SPI interface to simplify configuring the gate current and other settings.



STDRIVE102 gate drivers for BLDC

Designed for supply voltages from 6V to 50V, the STDRIVE102 series ensures high energy efficiency in battery-operated equipment such as power tools and domestic appliances. Able to drive six external N-channel power MOSFETs, the drivers can be programmed to source up to 1A and sink up to 2A and provide slew-rate regulation without external resistors. An ultra-low standby current of only 50 nA typ. helps maximize battery life in portable and battery-powered applications.

STDRIVE102 components integrate an advanced charge pump that ensures continuous operation of the high-side driver circuitry, simplifying the design of applications that require a PWM duty cycle of 100%. Integrated 12V and 3.3V linear regulators (LDOs) power the internal low-side drivers and embedded analog front-end (AFE), and can also be used to supply external components, further reducing bill-of-material costs. The STDRIVE102BP includes a configurable AFE with three programmable-gain amplifiers (PGAs) and three comparators for measuring the motor shunt currents. The PGAs and comparators can be enabled and disabled individually, or the entire AFE can be disabled to save energy. The STDRIVE102P has a simplified AFE with one PGA and one comparator.

All STDRIVE102 devices are equipped with a comprehensive set of embedded protection features, including undervoltage lockout (UVLO) to ensure gate drivers operate safely and thermal shutdown. Drain-source voltage (VDS) monitoring on both the high and low side provides dual-redundant overcurrent protection. The STDRIVE102BP also features a dedicated fault-indicator pin for the main supply voltage.

The EVLDRIVE102P and EVLDRIVE102BP evaluation boards are available now to help explore the performance of the drivers in a three-phase inverter built with ST's STL220N6F7 Power MOSFETs. Both are compatible with a wide range of Nucleo control boards for developing projects with different STM32 microcontrollers and the STM32 ecosystem, including the X-CUBE-MCSDK motor-control software package.

The STDRIVE102P in 5mm x 5mm 40-pin VFQFPN, priced from $1.23 and STDRIVE102BP in 6mm x 6mm 48-pin VFQFPN from $1.29, for orders of 1000 pieces, are in production now.

Please visit www.st.com/advanced-gate-drivers for more information.

Alexander Jurman
STMicroelectronics
Alexander.Jurman@st.com
