

STDRIVE101

Low voltage triple half-bridge gate driver



Low voltage gate driver for N-Channel power MOSFET integrating a low drop linear regular generating optimized supply voltage

The STDRIVE101 integrates all the half-bridge gate drivers for 3-phase BLDC motor control and its own linear supply regulator in a single IC, along with monitoring and protection functions. The chip monitors the drain source voltage on N-channel power MOSFET and signals anomalies to an appropriate controller, while native undervoltage lockout on the low-side and high-side sections prevents inefficient and potentially damaging switching operation. Cross conduction is prevented through interlocking or internally generated dead time.

KEY FEATURES & BENEFITS

- Wide supply voltage range 5.5 to 75 V
- Short propagation delay 40 ns
- Embedded VDS monitoring for each switch
- Sink/Source current capability 600 mA
- Control logic at 3.3 V and 5 V compatible
- Two input strategies:
 - ENx/INx with adjustable dead-time generation
 - INHx/INLx with interlocking
- Standby mode for low current consumption mode

KEY APPLICATIONS

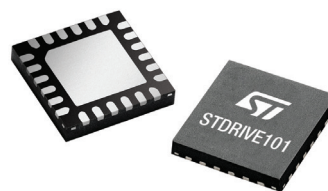
- Home automation and appliances
- Power tools
- Fans and pumps
- E-bikes
- Textile machines
- Gaming and consoles

Ecosystem

The EVALSTDRIVE101 evaluation board allows comprehensive evaluation of the STDRIVE101 gate driver and its many features, including embedded comparator for overcurrent protection and drain-source voltage sensing of each power MOSFET.

A motor control connector provides the interface for different STM32 microcontrollers to drive three-phase brushless DC motors, and the board can be configured in single shunt and three-shunt topologies.

You can implement FOC and six-step motion control with sensor or sensorless feedback thanks to a Hall sensor connector and phase sensing network, respectively. The EVALSTDRIVE101 demonstrates the real performance and efficiency benefits of the STDRIVE101, and how the device can simplify your motor control designs and improve reliability.



Order code	Package	Packing
STDRIVE101	VFQFPN 4 x 4 x 1.0 mm 24 leads pitch 0.5mm	Tube
STDRIVE101TR		Tape and Reel

Order code	Description	Related document
EVALSTDRIVE101	Demonstration board designed to drive three-phase brushless DC motors, which can be interfaced with STM32 microcontrollers through the motor control connector	DB4298



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