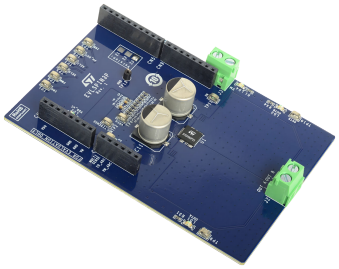
EVLSPIN3P2

Data brief

Demonstration board for STSPIN3P2 H-bridge motor driver



Product status link
EVLSPIN3P21
EVLSPIN3P22
EVLSPIN3P23

Features

- Power system-in-package integrating gate driver and high-current power MOSFETs:
  - $R_{DS(ON)}$ = 82 mΩ per leg (STSPIN3P21)
  - $R_{DS(ON)}$ = 45 mΩ per leg (STSPIN3P22)
  - $R_{DS(ON)}$ = 30 mΩ per leg (STSPIN3P23)
- Up to 16 V power supply and 35 A_{rms} output current
- Maximum transient supply voltage: 32 V
- Maximum standby current: 1 µA at 25 °C
- Multisense monitoring functions
  - Analog motor current feedback
  - Chip temperature monitoring
- Undervoltage shutdown
- Overvoltage clamp
- Thermal shutdown
- Cross-conduction protection
- X-Nucleo form factor with Arduino® connectors
- RoHS compliant

Applications

- Stage lighting
- Factory automation
- ATM and money handling machines
- Textile machines
- Home appliances
- Robotics
- Brushed DC motors
- Solenoids

Description

The EVLSPIN3P2 demonstration board is a fully integrated H-bridge motor driver, which allows the evaluation of all the STSPIN3P2 features.

The board includes the minimum set of electrical components recommended in the device datasheet. This configuration allows the user to connect the load, power supply, and microcontroller directly, without additional external component design or connection.

The board can be stacked with an X-Nucleo MCU control board through Arduino® connectors or driven directly by external pins.

STSPIN3P2 is a full-bridge product series that expands the capability of STSPIN family for low-voltage DC motors.

The level of protection offered by STSPIN3P is excellent, with a comprehensive set of features. The device is protected from overvoltage, undervoltage, overtemperature, and cross conduction.

The STSPIN3P series is assembled in a QFN 6×6 mm triple-pad 26+2L package equipped with three exposed islands for optimized dissipation performance. This package is designed for harsh industrial environments and offers improved thermal performance due to exposed die pads.

The input signals INA and INB can interface directly with the microcontroller to select the motor direction and the brake condition. Two selection pins, SEL0 and SEL1, are available to access information on the MultiSense pin and PH_OUT pin.

The MultiSense pin enables monitoring the motor current by delivering a current proportional to the motor current value and provides the diagnostic feedback. The PH_OUT pin provides feedback on the OUT status, confirming that the motor operates correctly.

The PWM, with a frequency of up to 25 kHz, allows control of the motor speed under all conditions.

1 Specifications

Ratings of the board can be found in Table 1.

Table 1. EVLSPIN3P2 - specifications

Parameter		Value	Part numbers
Supply voltage	Nominal	From 5 V to 16 V	All
Maximum current	Continuous (1)	10 A_{rms}	STSPIN3P21
		15 A_{rms}	STSPIN3P22
		23 A_{rms}	STSPIN3P23
	Peak (2)	15 A	STSPIN3P21
		23 A	STSPIN3P22
		35 A	STSPIN3P23
Maximum power	Continuous (1)	150 W	STSPIN3P21
		250 W	STSPIN3P22
		300 W	STSPIN3P23

1. *At 25 °C ambient temperature.*
2. *Typical value at 25°C ambient temperature.*

Revision history

Table 2. **Document revision history**

Date	Version	Changes
23-Apr-2026	1	Initial release.

Contents

1 Specifications 3
Revision history 4
List of tables 6

List of tables

Table 1. EVLSPIN3P2 - specifications . . . 3
Table 2. Document revision history . . . 4

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