

Trinamic TMC5271 3D Printing User Guide

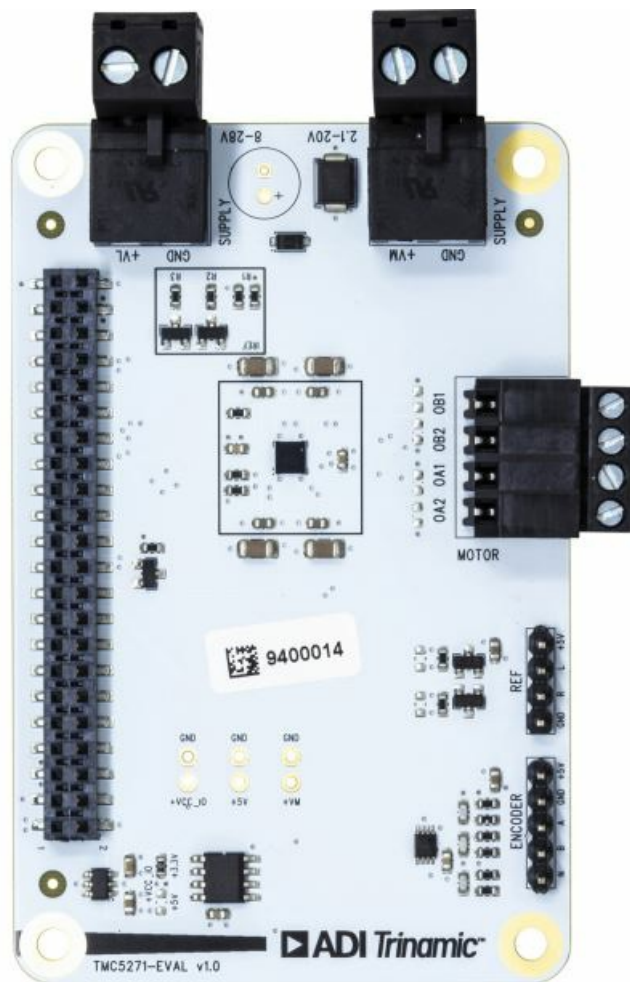
[Home](#) » [TRINAMIC](#) » Trinamic TMC5271 3D Printing User Guide 

Contents

- [1 Trinamic TMC5271 3D Printing](#)
- [2 Product Information](#)
- [3 Specifications](#)
- [4 Product Usage Instructions](#)
- [5 Module Top/Bottom View](#)
- [6 Features and Additional Resources](#)
- [7 Schematics](#)
- [8 Documents / Resources](#)
 - [8.1 References](#)
- [9 Related Posts](#)



Trinamic TMC5271 3D Printing



Product Information

IC Breakout Boards – TMC5271-BOB

The TMC5271-BOB is an IC breakout board designed for the TMC5271E stepper motor driver. It provides easy access to the pins and features of the driver, allowing for convenient testing and prototyping.

Features

- TMC5271E stepper motor driver
- Top/bottom view pin list
- Left and right headers for easy connectivity
- Supports SPI communication
- LED status indicator

Additional Resources

- Schematics
- Connector information
- Bill of Materials (BOM)

Specifications

Module	Value
Driver	TMC5271E
Package Type	TSSOP38
LED	Blue/0603
Resistor (R)	1k/1% (x1), 10k/1% (x4)
Capacitor (C)	100nF, 16V 0603 (x1), 100nF, 35V 0603 (x4)

Product Usage Instructions

- **Connections**

Connect the TMC5271-BOB to your system using the provided left and right headers.

- **Power Supply**

Ensure that the +VCC_IO and +VM pins are connected to the appropriate power supply voltages in your system.

- **SPI Communication**

The TMC5271E driver supports SPI communication. Connect the SPI_CS_n, SPI_SCK, SPI_MOSI, and SPI_MISO pins to the corresponding SPI interface on your microcontroller or host device.

- **Motor Connections**

Connect your stepper motor to the A1, A2, B1, and B2 pins on the TMC5271-BOB. Ensure that the motor phases are correctly connected.

- **Control Signals**

The TMC5271E driver provides control signals for motor direction and step resolution. Connect the REFL/STEP pin to control the step resolution and the REFR/DIR pin to control the motor direction.

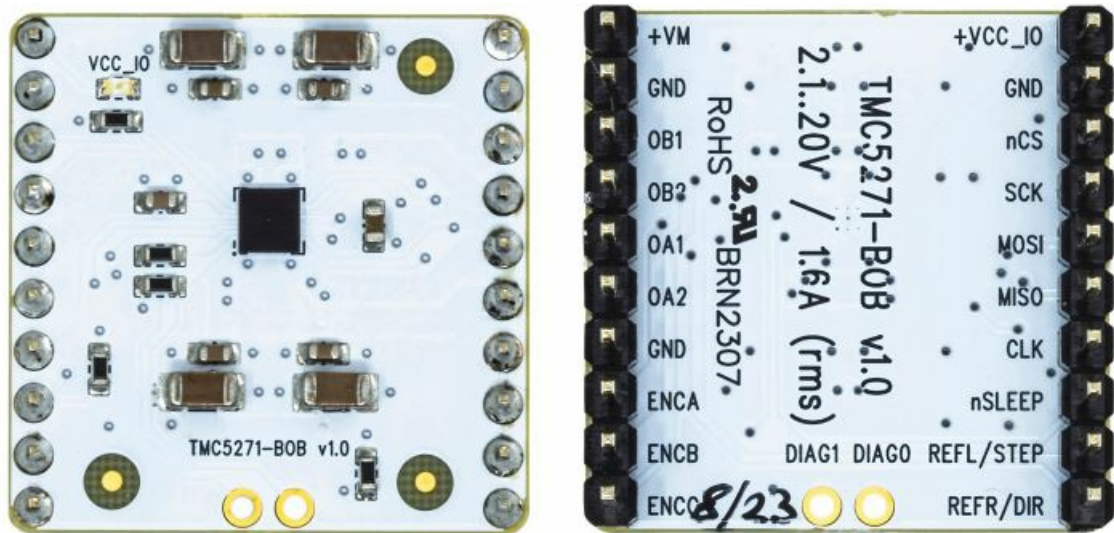
- **Status LED**

The status LED on the TMC5271-BOB provides visual feedback about the driver's operation. Monitor the LED to ensure the proper functioning of the driver.

FAQ

- Q: What is the package type of the TMC5271E driver?
- A: The TMC5271E driver is packaged in a TSSOP38 package.
- Q: How many control signals are available on the TMC5271-BOB?
- A: The TMC5271-BOB provides control signals for motor step resolution and direction, as well as SPI communication signals.
- Q: How can I power the TMC5271-BOB?
- A: The TMC5271-BOB requires both +VCC_IO and +VM power supplies. Connect these pins to the appropriate power sources in your system.

Module Top/Bottom View



Features and Additional Resources

- TMC5271 Stepper Motor Driver & Controller
- Supply Voltage 2.1V to 20V DC
- Iphase up to 1.6ARMS
- StealthChop2 Silent PWM Mode
- StallGuard4 Sensorless Motor Load Detection
- TriCorder Sensorless Standstill Steploss Detection and Full Step Encoder
- Board Width 1.0", Board Height 1.0"
- 2 x 10 Pin 0.1" Header Rows for Connectors
- [Link to Additional Information and IC Data Sheet](#)

Pin List

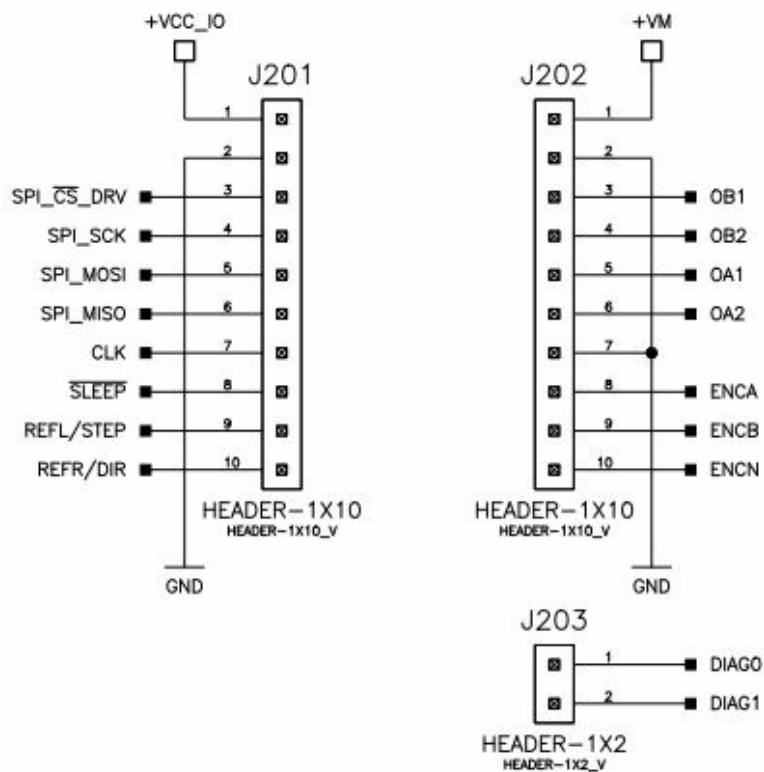
Pin	Left Header	Right Header
1	+VCC_IO	+VM
2	GND	GND
3	SPI_CS _n	B1 (Motor Phase B)
4	SPI_SCK	B2 (Motor Phase B)
5	SPI_MOSI	A1 (Motor Phase A)
6	SPI_MISO	A2 (Motor Phase A)
7	CLK	GND
8	SLEEP _n	ENCA
9	REFL/STEP	ENCB
10	REFER/DIR	ENGINE
TP	DIAG0	DIAG1

Bill of Materials

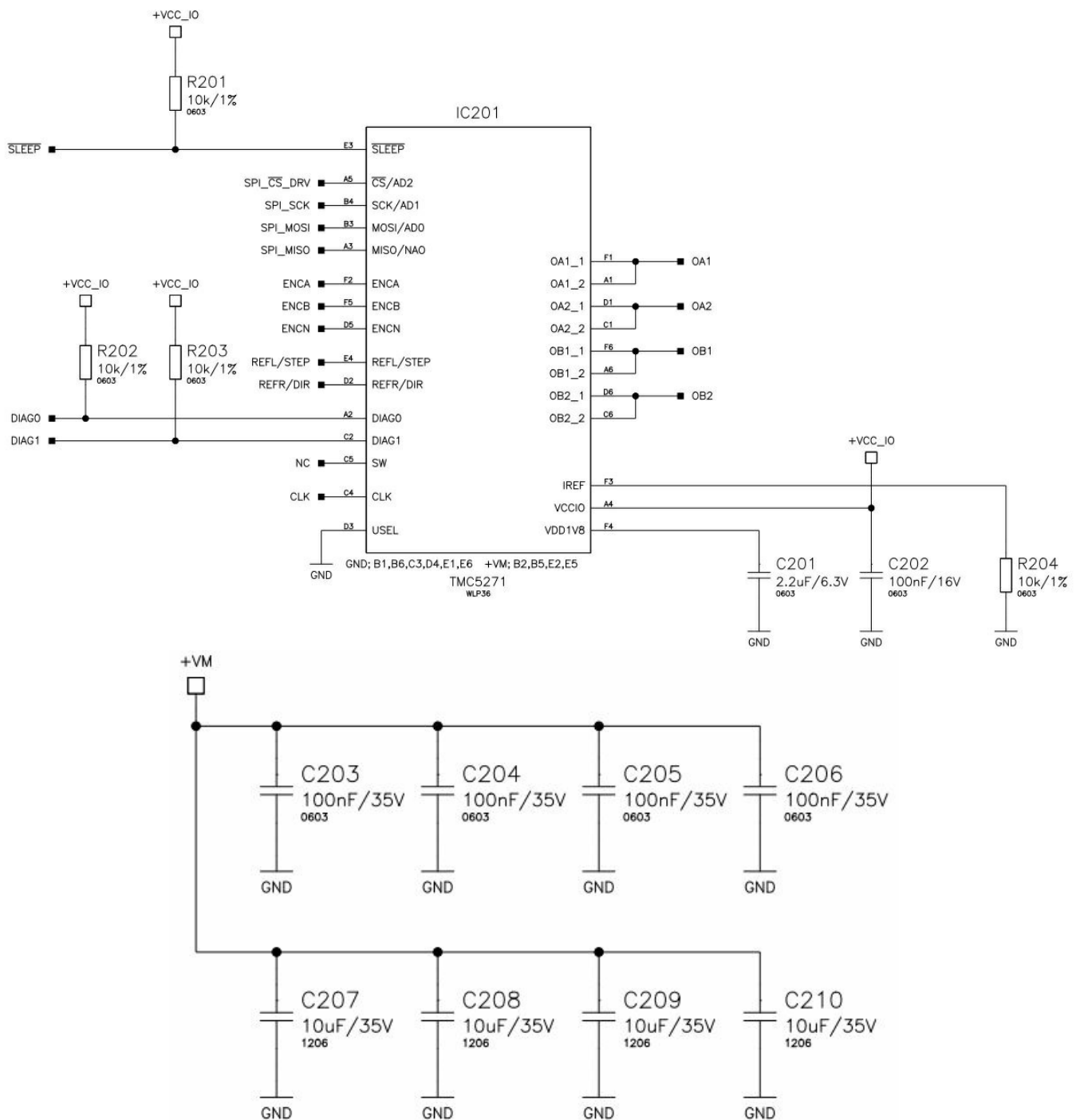
Pcs.	Value	Footprint	Description
1	1k/1%	0603	Resistor
4	10k/1%	0603	Resistor
1	2 μ 2, 6.3V	0603	Capacitor
4	10 μ , 35V	0603	Capacitor
1	100nF, 16V	0603	Capacitor
4	100nF, 35V	0603	Capacitor
1	Blue/0603	0603	LED
1	TMC5271	TSSOP38	ADI Trinamic Stepper Motor Driver

Schematics

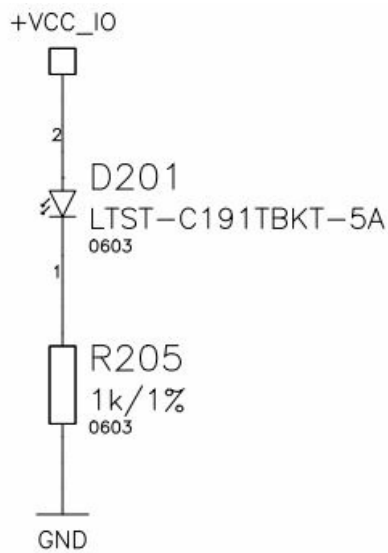
Connectors



Motor Driver

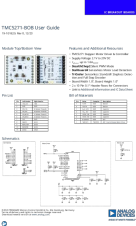


Status LED



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Documents / Resources

	<p>Trinamic TMC5271 3D Printing [pdf] User Guide TMC5271 3D Printing, TMC5271, 3D Printing, Printing</p>
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References

- [ADI Trinamic Support | Analog Devices](#)
- [TMC5271 Datasheet and Product Info | Analog Devices](#)
- [User Manual](#)