



KAmoD Motor Driver TB6612FNG



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Źródło: https://wiki.kamamilabs.com/index.php?title=KAmoD_Motor_Driver_TB6612FNG

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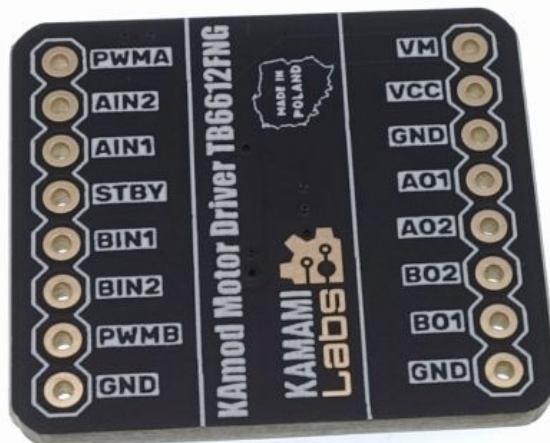
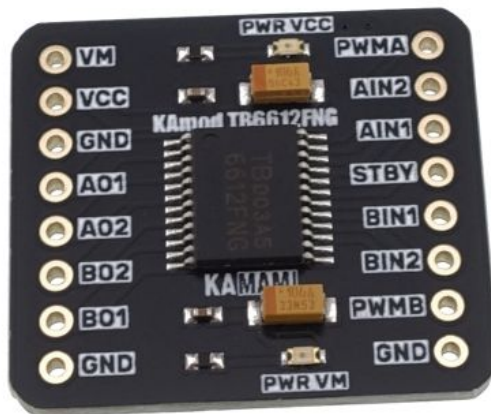
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Description

KAmoD Motor Driver TB6612FNG - Dual DC Motor Driver

The KAmoD Motor Driver TB6612FNG is a versatile, powerful, and easy-to-use motor driver module that allows for precise control of two DC motors (or one stepper motor) in terms of direction and speed, while also offering protection and a low-power mode. It is an ideal alternative to L298N-based modules.

The TB6612FNG integrated circuit, developed by Toshiba, contains two independent H-bridges using MOSFET transistors. Each H-bridge can control one DC motor. The module allows for controlling DC motors with a voltage ranging from 4.5 to 13.5 V (VM). The integrated circuit's logic circuits (VCC) should be powered with a voltage between 2.7 and 5.5 V. The TB6612FNG can deliver a continuous current of up to 1.2 A per channel. The peak transient current can be up to 3.2 A. If you need more current for a single motor, you can connect both channels (outputs and control inputs), obtaining up to 2 A of continuous current.



Basic Features and Parameters

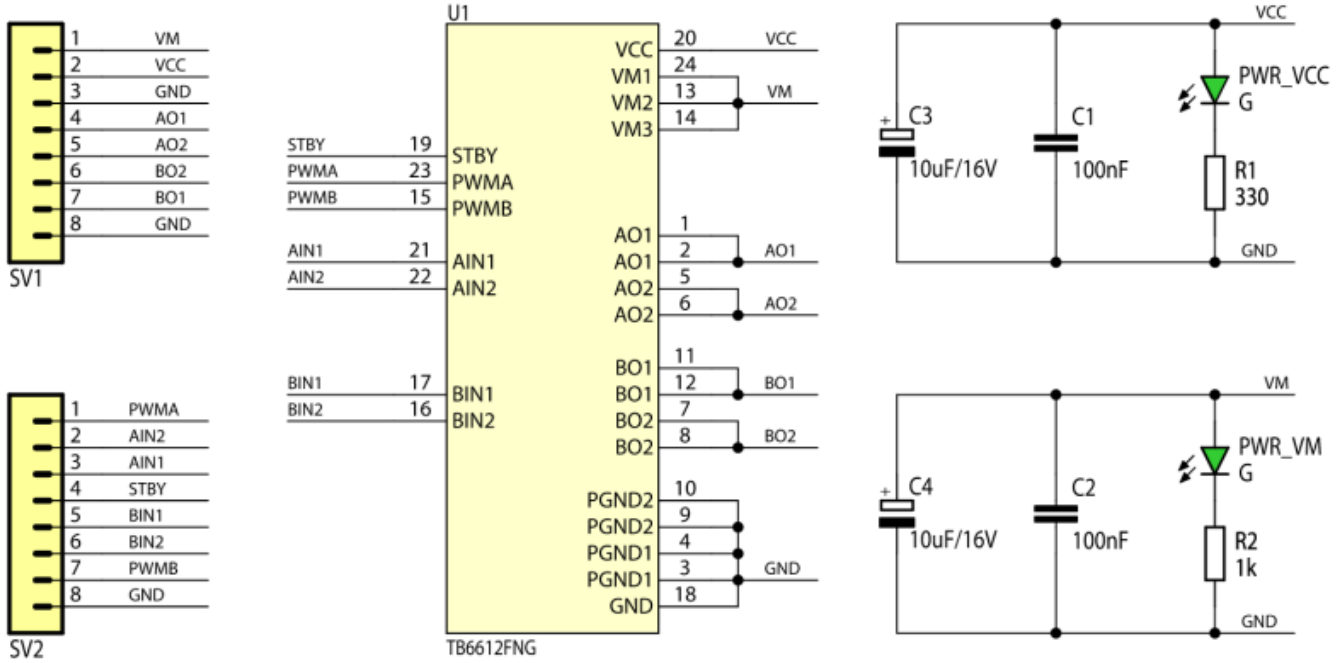
- Motor Voltage (VM): 4.5 - 13.5 V
- Logic Voltage (VCC): 2.7 - 5.5 V
- Continuous Output Current: 1.2 A per channel
- Instantaneous Output Current: 3.2 A per channel
- Maximum PWM Frequency: 100 kHz
- Standby Mode
- Built-in Thermal Shutdown Circuit (TSD)
- Undervoltage Lockout (UVLO) Protection
- Built-in Filter Capacitors on the Motor (VM) and Logic (VCC) Power Lines
- LEDs Indicating Voltage on the Motor (VM) and Logic (VCC) Power Lines
- Connector Spacing: 20.32 mm (0.8 inch)
- Pin Pitch: 2.54 mm (0.1 inch)
- PCB dimensions: 22.86 x 25.4 mm

Standard Equipment

Code	Description
KAmo Motor Driver TB6612FNG	- Assembled and powered-up module 2 x straight 8-pin goldpin header, 2.54 mm pitch



'Schematic



Motor Control

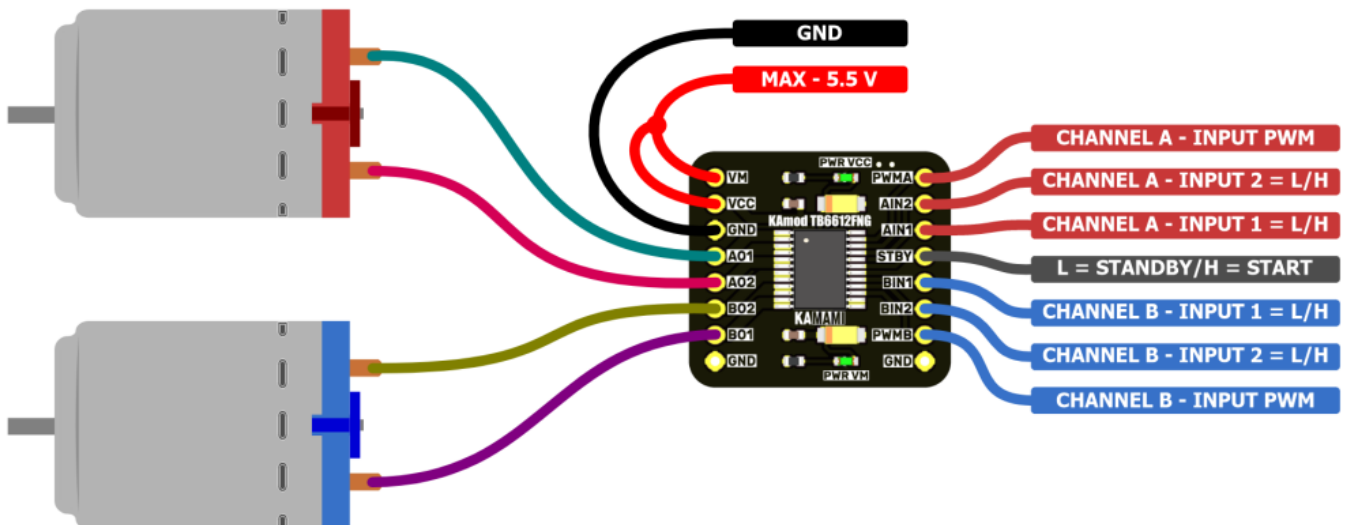
Each motor is controlled using two input signals (**IN1** and **IN2**), which allow for the selection of one of four functional modes:

- Clockwise rotation (CW)
- Counterclockwise rotation (CCW)
- Short brake
- Slow stop (Stop / High impedance)

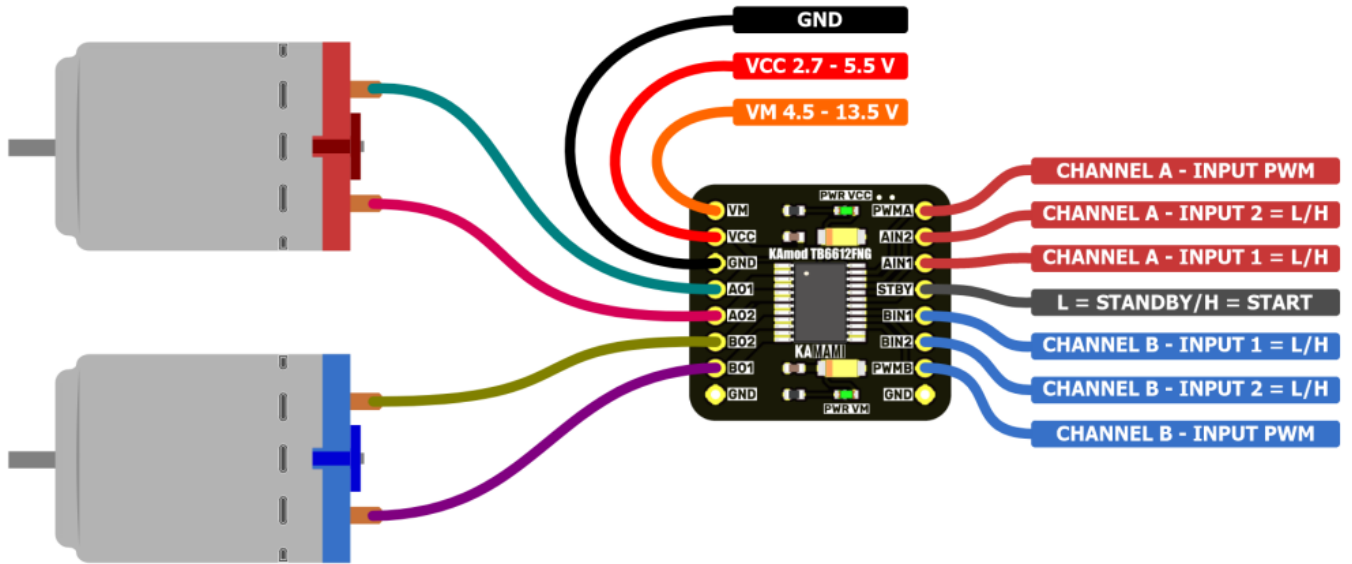
The two motor outputs (A and B) can be controlled separately, and the speed of each motor can be controlled using a PWM input signal with a frequency of up to 100 kHz. To bring the controller out of sleep mode, a high level must be applied to the **STBY** (STANDBY) input. A low level (default) puts the system into sleep mode (low power consumption).

A(B)IN1	A(B)IN2	PWMA(B)	A(B)O1	A(B)O2	Action
H	H	H/L	L	L	Short brake
L	H	H	L	H	Counterclockwise rotation (CCW)
L	H	L	L	L	Short brake
H	L	H	H	L	Clockwise rotation (CW)
H	L	L	L	L	Short brake
L	L	H	OFF	OFF	Slow Stop (Stop / High Impedance)

An example of connecting motors with a common supply of **VCC** and **VM** can be found in the figure below:

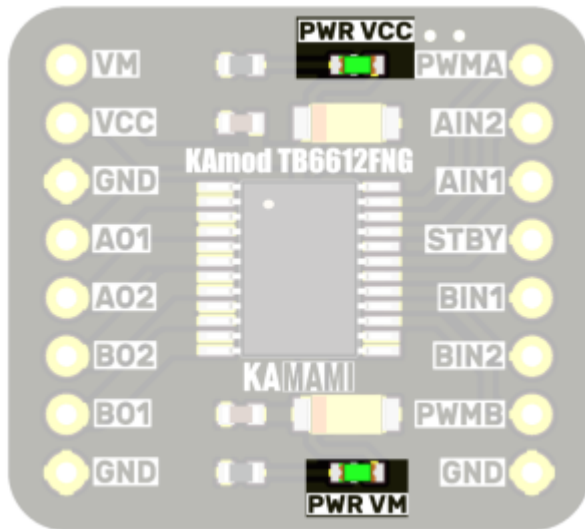


An example of connecting the motors with separate power supplies for **VCC** and **VM** is shown in the figure below:



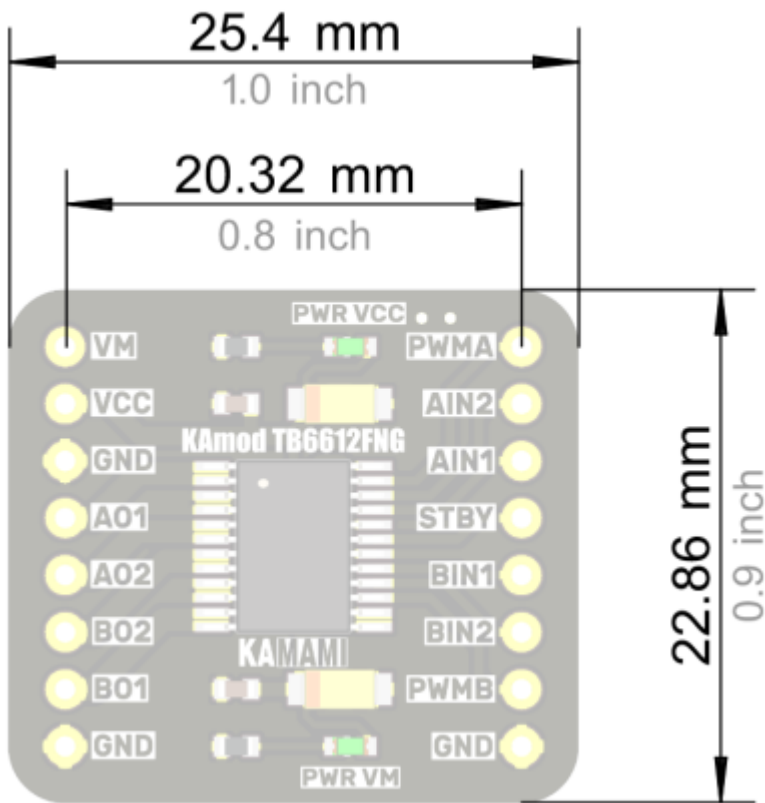
Indicator LEDs

The module is equipped with two LEDs: **PWR VCC** and **PWR VM**, which indicate the presence of each supply voltage.



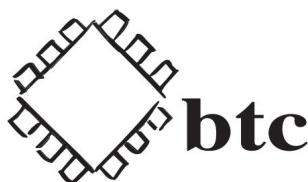
Dimensions

The KAmoD Motor Driver TB6612FNG board measures 22.86 x 25.4 mm. The pin spacing is 20.32 mm (0.8 inch), and the pin pitch is 2.54 mm (0.1 inch).



Links

- [Datasheet of the TB6612FNG system](#)
- [CAD model \(STEP\)](#)



BTC Korporacja
05-120 Legionowo
ul. Lwowska 5
tel.: (22) 767-36-20
faks: (22) 767-36-33
e-mail:
sprzedaz@kamami.pl
<https://kamami.pl>

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