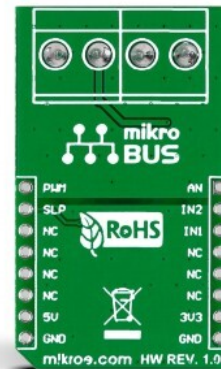


DC Motor 2 Click



PID: MIKROE-1911

DC Motor 2 Click is a compact add-on board with a brushed DC motor driver. This board features [Toshiba Semiconductor's](#) TB6593FNG, a PWM-type, full-bridge brushed DC motor driver. The TB6593FNG is rated for an operating voltage range from 2.5V to 13V with an output current capacity of 1A, with the motor controlled directly through a PWM signal and two additional IN signals with which it is possible to determine the operating mode of the driver itself. It also has complete protection capabilities supporting thermal shutdown and a low voltage detecting circuit. This Click board™ is suitable for driving DC brushed motors in general-purpose applications with relatively higher voltage requirements.

DC Motor 2 Click is supported by a [mikroSDK](#) compliant library, which includes functions that simplify software development. This [Click board™](#) comes as a fully tested product, ready to be used on a system equipped with the [mikroBUS™](#) socket.

How does it work?

DC Motor 2 Click is based on the TB6593FNG, full-bridge brushed DC motor driver from Toshiba Semiconductor. The TB6593FNG comes in a configuration with an output transistor in LD MOS structure with low on-resistance (0.35Ω typical with 5V power supply). It has a wide operating voltage range with an output current capacity of 1A maximum and control functions, including motor-related and built-in protection circuits such as thermal shutdown and low voltage detecting.

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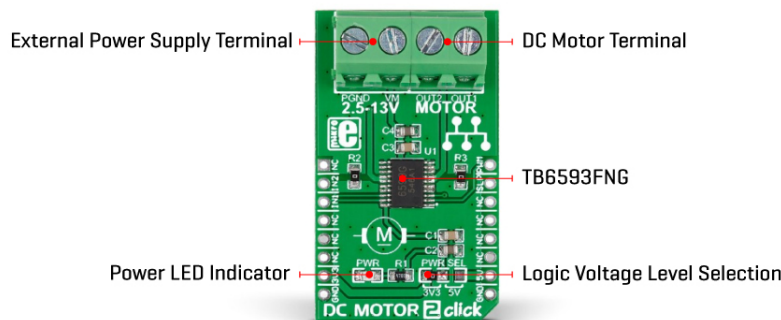
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ISO 27001: 2013 certification of informational security management system.
ISO 14001: 2015 certification of environmental management system.
OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).



This Click board™ is a PWM-controlled type with the ability for motor control through several pins of the mikroBUS™ socket. The PWM signal of the mikroBUS™ socket drives the motor while the IN1 and IN2 pins, routed on the CS and RST pins of the mikroBUS™ socket, provide binary direction signals that set the direction of the motor (clockwise or counterclockwise) or apply stop or short brake functions. Stop mode cuts off the power supply, so the motor continues spinning until it runs out of momentum, while a short break brings it to an abrupt stop. Alongside the PWM pin from the mikroBUS™ socket, used to drive a DC motor, this Click board™ also has a Standby pin labeled as SLP and routed to the INT pin of the mikroBUS™ socket to optimize power consumption used for power save purposes.

DC Motor 2 Click supports an external power supply for the TB6593FNG, which can be connected to the input terminal labeled as VM and should be within the range of 2.5V to 13V, while the DC motor coils can be connected to the terminals labeled as OUT1 and OUT2.

This Click board™ can operate with both 3.3V and 5V logic voltage levels selected via the PWR SEL jumper. This way, it is allowed for both 3.3V and 5V capable MCUs to use the communication lines properly. However, the Click board™ comes equipped with a library containing easy-to-use functions and an example code that can be used, as a reference, for further development.

Specifications

Type	Brushed
Applications	Can be used for driving DC brushed motors in general-purpose applications with relatively higher voltage requirements
On-board modules	TB6593FNG - brushed DC motor driver from Toshiba Semiconductor
Key Features	Full-bridge driver for one DC motor, PWM control, selectable motor operational modes, Standby Power-save mode, full protection features, and more
Interface	GPIO, PWM
Feature	No ClickID
Compatibility	mikroBUS™

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Click board size	M (42.9 x 25.4 mm)
Input Voltage	3.3V or 5V, External

Pinout diagram

This table shows how the pinout on DC MOTOR 2 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
	NC	1	AN	PWM	16	PWM	PWM Signal
Motor Control 2	IN2	2	RST	INT	15	SLP	Standby Mode
Motor Control 1	IN1	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
Power Supply	3.3V	7	3.3V	5V	10	5V	Power Supply
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
JP1	PWR SEL	Left	Logic Level Voltage Selection 3V3/5V: Left position 3V3, Right position 5V

DC MOTOR 2 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V
External Power Supply	2.5	-	13	V
Output Current	-	-	1	A

Resources

[Click board™ Catalog](#)

[Click Boards™](#)

Downloads

[DC Motor 2 click example on Libstock](#)

[DC Motor 2 Click Manual](#)

[TB6593FNG datasheet](#)

[DC MOTOR 2 click schematic](#)

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[DC MOTOR 2 click 2D and 3D files](#)

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