KAMAMI

Kamod Motor Driver DRV8835

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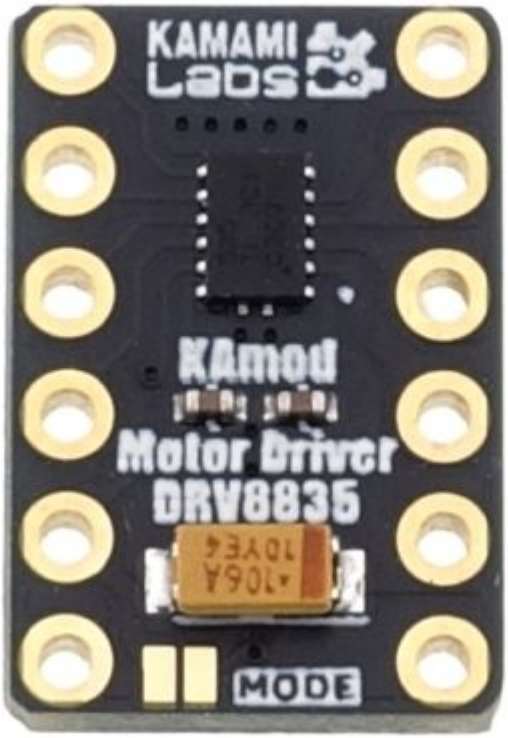
Description

Kamod Motor Driver DRV8835 - dual-channel 0-11V 1.2A motor driver module
The Kamod Motor Driver DRV8835 is a compact dual-channel motor driver module designed for implementing drive systems in small battery-powered devices, toys, robotics, and prototypes. The module allows control of two DC motors or one bipolar stepper motor using two independent output channels operating in an H-bridge configuration. The power supply voltage for the power circuit, supplied to the VM pin, ranges from 0 to 11 V, while the logic supply voltage, supplied to the VCC pin, ranges from 2 to 7 V. Thanks to this, the module can work with both 3.3 V and 5 V logic systems. The maximum continuous output current is 1.2 A per channel, while the permissible peak current reaches 1.5 A per channel, allowing for the control of small and medium-sized drives with moderate power consumption. The actual current capacity depends on cooling conditions, mounting method, and the nature of the load.



The module is equipped with overcurrent and thermal protection, which limits the risk of damage in the event of an overload or excessive temperature rise of the system. Due to the small dimensions of the board, measuring 10 x 15 mm, the module can be used in space-constrained applications such as small mobile robots, actuators, miniature drive mechanisms, and portable devices, while the breadboard-compatible pin spacing facilitates easy prototyping.

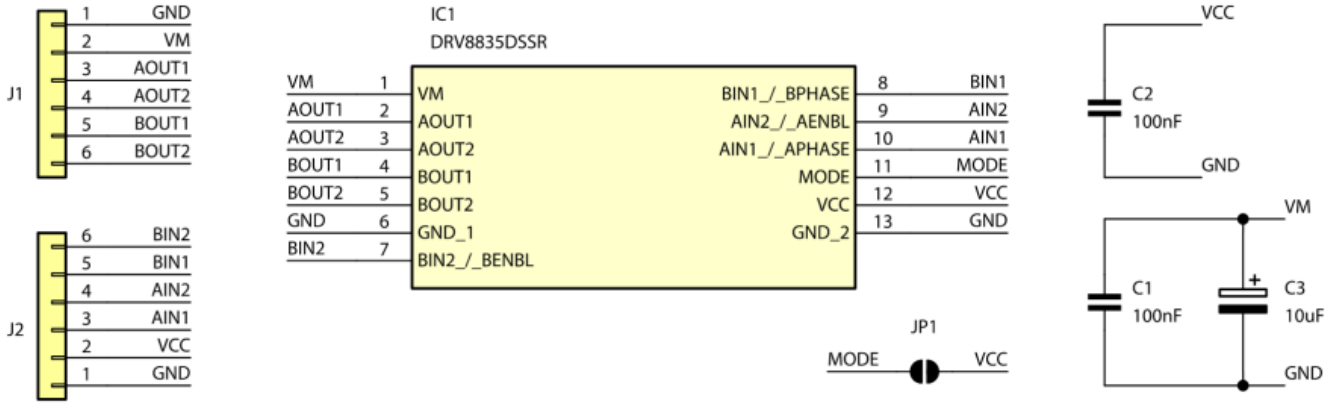
Basic features and parameters

- Control of two DC motors or one bipolar stepper motor
- Motor supply voltage: 0 - 11 V
- Logic supply voltage: 2 - 7 V
- Continuous output current: 1.2 A per channel
- Peak output current: 1.5 A per channel
- Possibility of parallel channel connection to increase the maximum output current
- Overcurrent and thermal protection
- Operating modes
    - IN / IN
    - PHASE / ENABLE
- Module dimensions: 10 × 15 mm

Standard equipment

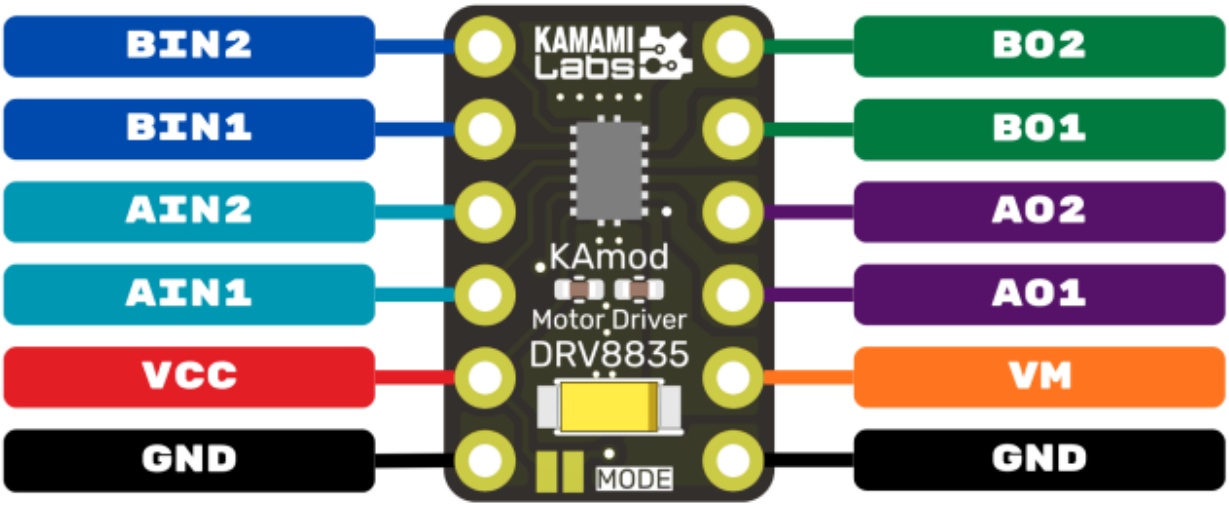
Code	Description
Kamod Motor Driver DRV8835	**• Assembled and tested module** **• 2 × straight 6-pin goldpin header, 2.54 mm pitch**

Schematic



Pinout description

The AIN1 and AIN2 inputs are used to control channel A, and the BIN1 and BIN2 inputs are analogously used to control channel B. The AO1 and AO2 outputs act as output terminals for the first H-bridge, while BO1 and BO2 correspond to the second channel. This configuration allows for independent control of two DC motors or connecting two windings of a bipolar stepper motor. The module also allows for parallel connection of both channels to increase the output current capacity; however, this solution requires synchronized control of both channels.

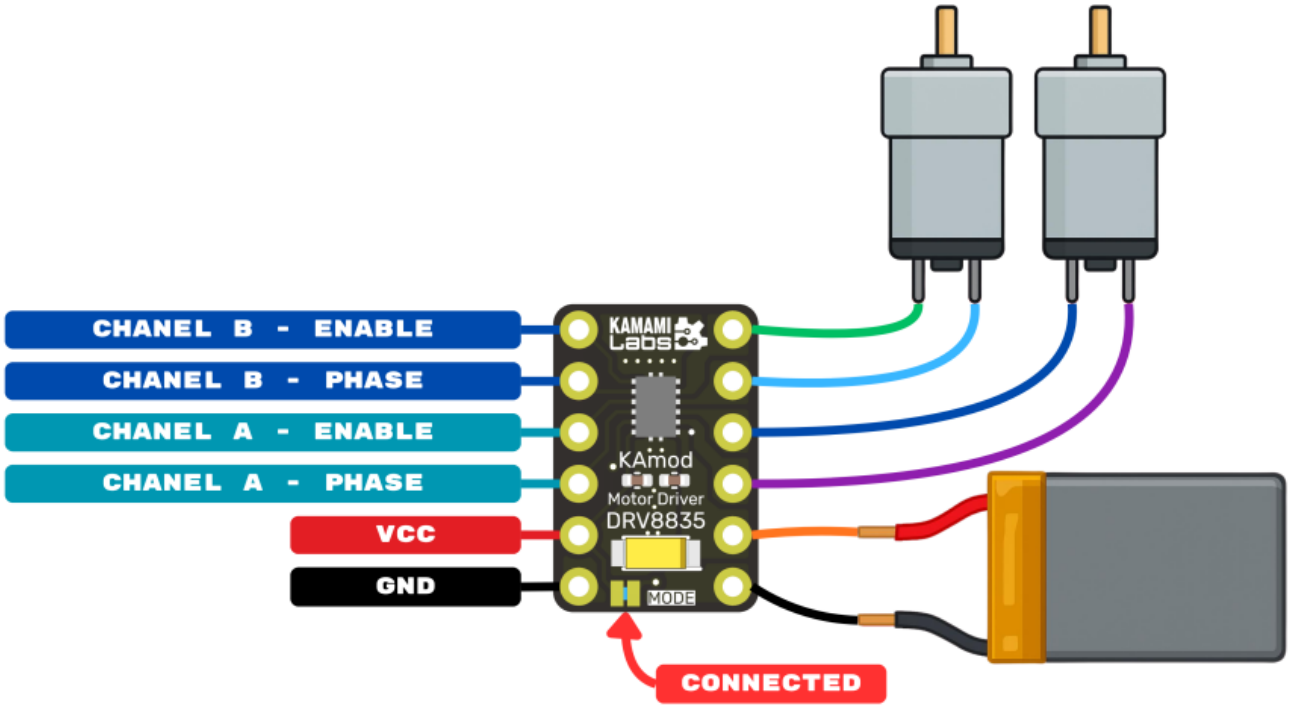


Pin name	Description
BIN2	Channel B control input
BIN1	Channel B control input
AIN2	Channel A control input
AIN1	Channel A control input
VCC	Logic supply 2 - 7 V
GND	Ground
VM	Motor supply 0 - 11 V
AO1	Channel A output
AO2	Channel A output
BO1	Channel B output
BO2	Channel B output

Operating modes

The controller supports two control modes: IN/IN and PHASE/ENABLE. In IN/IN mode, each channel is controlled via two logic inputs, allowing direct configuration of the rotation direction and the output state. In PHASE/ENABLE mode, one input is responsible for selecting the direction, while the other activates the channel and regulates speed, which simplifies control and requires only one PWM signal per channel. By default, the module operates in IN/IN mode and can be switched to PHASE/ENABLE mode by bridging the solder pads marked as MODE.

PHASE/ENABLE operating mode



ENABLE	PHASE	OUT1	OUT2	DC Motor State	Description
0	X	L	L	Brake	Motor is actively braked
PWM	0	PWM	L	CW	Clockwise rotation (CW)
PWM	1	L	PWM	CCW	Counter-clockwise rotation (CCW)

IN/IN operating mode

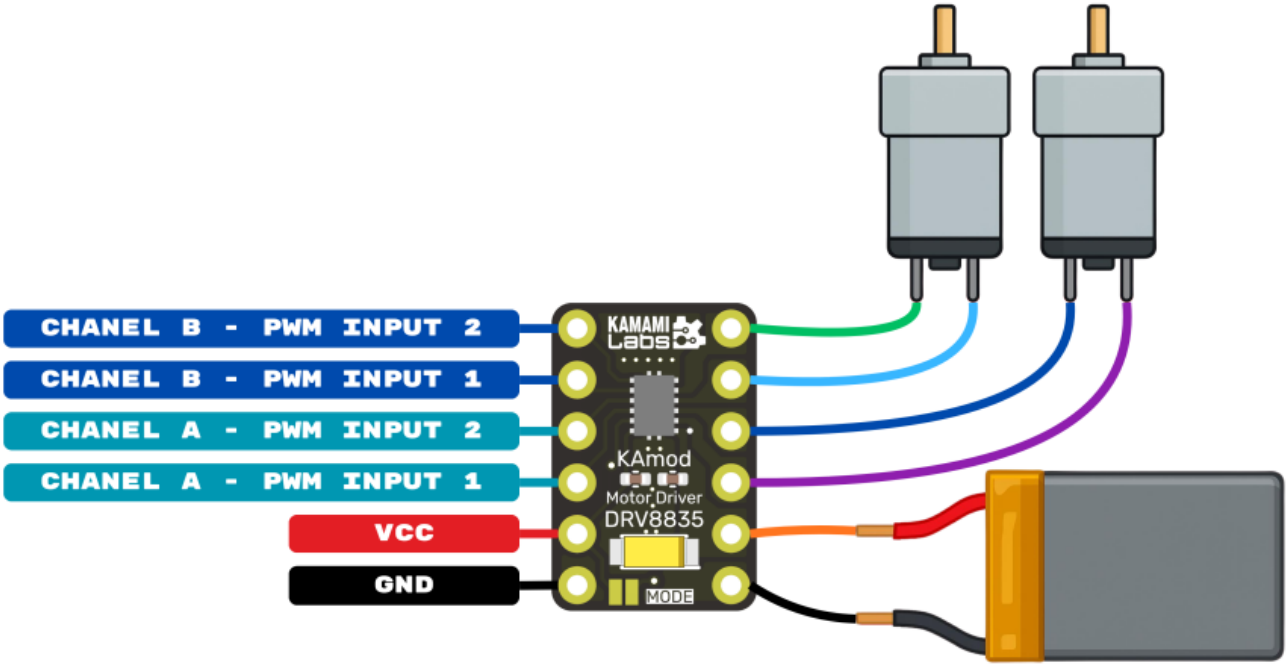


Table describing the IN/IN operating mode (activated when the MODE pads are disconnected)

IN1	IN2	OUT1	OUT2	DC Motor State	Description
0	0	OFF	OFF	Coast	Both outputs are off
PWM	0	PWM (H/OFF)	PWM (L/OFF)	CW / Coast	Clockwise rotation (CW) at PWM speed
0	PWM	PWM (L/OFF)	PWM (H/OFF)	CCW / Coast	Counter-clockwise rotation (CCW) at PWM speed
PWM	1	L	PWM (L/H)	CW / Brake	Brake / Clockwise rotation (CW) at 1 - % PWM speed
1	PWM	PWM (L/H)	L	CCW / Brake	Brake / Counter-clockwise rotation (CCW) at 1 - % PWM speed
1	1	L	L	Brake	Motor is actively braked

Links

- DRV8835 datasheet
- CAD Model (STEP)

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