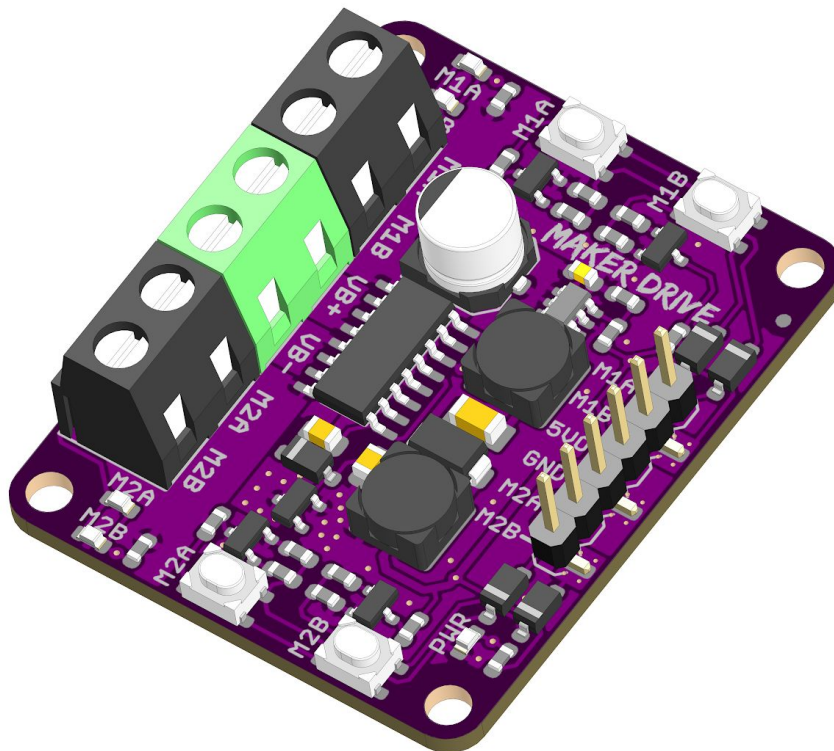




## **MAKER-DRIVE**

### **Simplifying H-Bridge Motor Driver for Beginner**



## **Datasheet**

Rev 1.0  
Feb 2019

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## 1. BOARD LAYOUT & FUNCTION

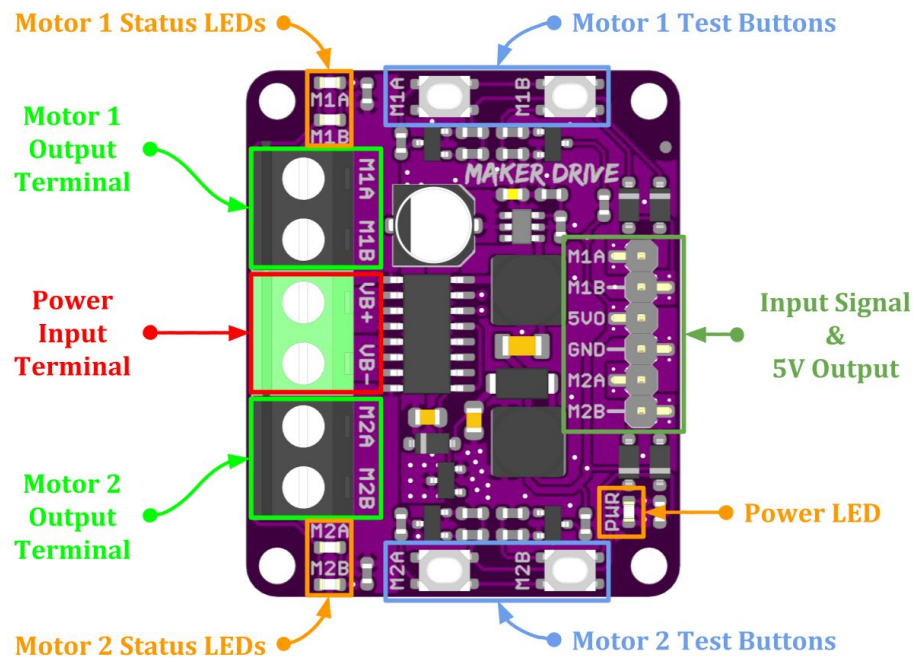


Figure 1: MAKER-DRIVE Board Functions

Function	Description
<b>Power Input Terminal</b>	Connect to battery. <ul style="list-style-type: none"> <li>VB+ : Positive</li> <li>VB- : Negative</li> </ul>
<b>Motor Output Terminal</b>	Connect to motor terminal. Motor direction depends on the polarity.
<b>Power LED</b>	Turn on when power up.
<b>Motor Status LEDs</b>	Turn on when the motor is running. <ul style="list-style-type: none"> <li>M1A / M2A : Forward*</li> <li>M1B / M2B : Backward*</li> </ul>
<b>Test Buttons</b>	Press to test the functionality of the motor driver. Motor will run at full speed. <ul style="list-style-type: none"> <li>M1A / M2A : Forward*</li> <li>M1B / M2B : Backward*</li> </ul>
<b>Input Signal &amp; 5V Output</b>	Input signal from microcontroller to control the motor. +5V output can be used to power the microcontroller. <ul style="list-style-type: none"> <li>M1A : PWM Input A for motor 1.</li> <li>M1B : PWM Input B for motor 1.</li> <li>5V0 : DC +5V Output (Maximum 200mA)</li> <li>GND : Ground</li> <li>M2A : PWM Input A for motor 2.</li> <li>M2B : PWM Input B for motor 2.</li> </ul>

Table 1: MAKER-DRIVE Board Functions

\* Actual motor direction is depending on the motor connection.  
Swapping the connection (MA & MB) will reverse the direction.

## 2. SPECIFICATIONS

No	Parameters		Min	Max	Unit
1	Power Input Voltage		2.5	9.5	VDC
2	Maximum Motor Current	Continuous	-	1	A
		Peak (< 5 seconds)	-	1.5	A
3	Logic Input Voltage (M1A, M1B, M2A, M2B)	Low Level	0	0.5	V
		High Level	1.7	6	V
4	PWM Frequency (Output frequency is same as input frequency)		DC	20	KHz
5	DC +5V Output Maximum Current		-	200	mA

Table 2: MAKER-DRIVE Absolute Maximum Ratings

## 3. DIMENSION

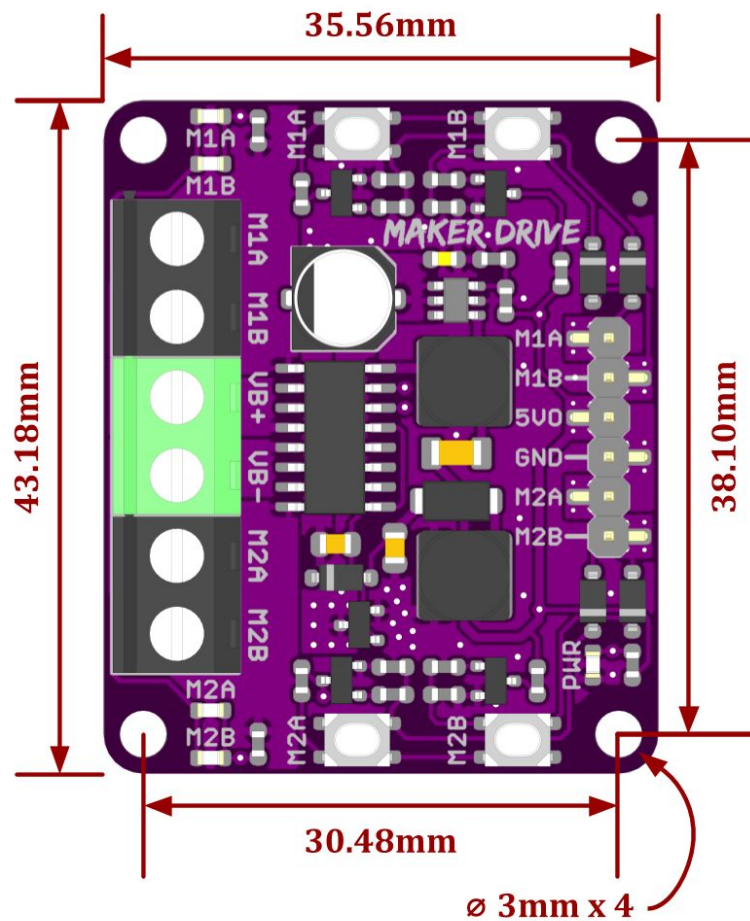


Figure 2: MAKER-DRIVE Dimension

## 4. INTERFACE

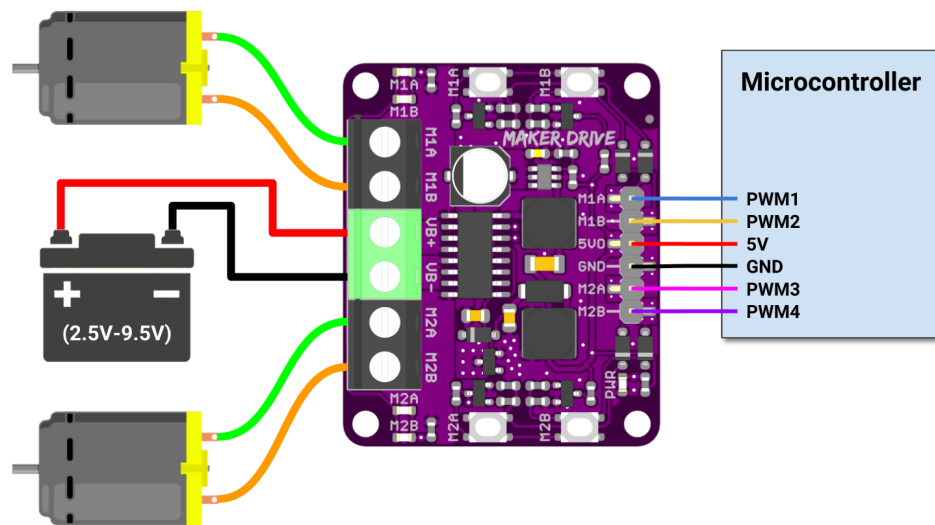


Figure 3: Connection Diagram for Brushed DC Motor

Input A (M1A / M2A)	Input B (M1B / M2B)	Output A (M1A / M2A)	Output B (M1B / M2B)	Motor
Low	Low	Low	Low	Brake
High	Low	High	Low	Forward*
Low	High	Low	High	Backward*
High	High	Hi-Z (Open)	Hi-Z (Open)	Coast

Table 3: Input Truth Table

\* Actual motor direction is depending on the motor connection.  
Swapping the connection (MA & MB) will reverse the direction.

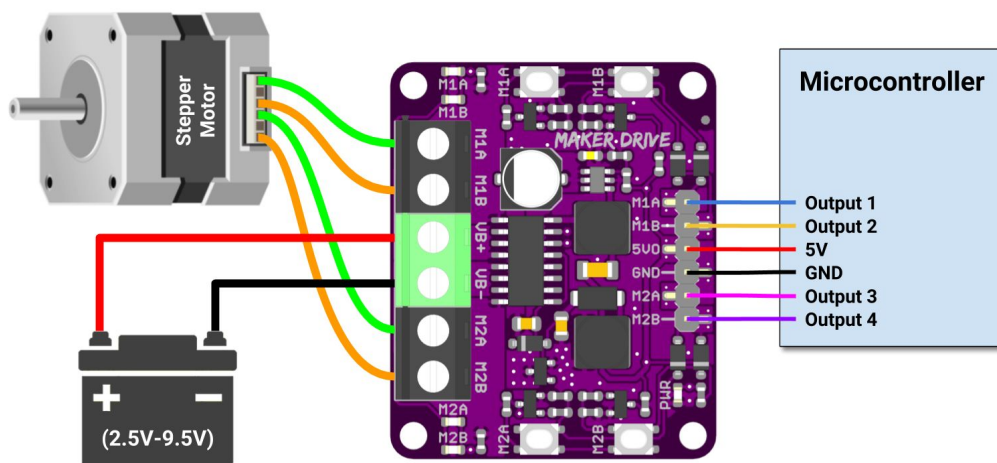


Figure 4: Connection Diagram for Stepper Motor

## 5. PROTECTION FEATURES

- **Power Input Reversed Polarity Protection**

Protect the motor driver from damage if the battery is connected in wrong polarity. This is a very common mistake done by a lot of makers even for the very experienced one.

- **Temperature Protection**

The motor driver H-Bridge IC has built-in over temperature protection. Output to the motor will be cut off when the IC internal temperature is over 150 degree Celsius. This protects the H-bridge from damage caused by overheating.

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