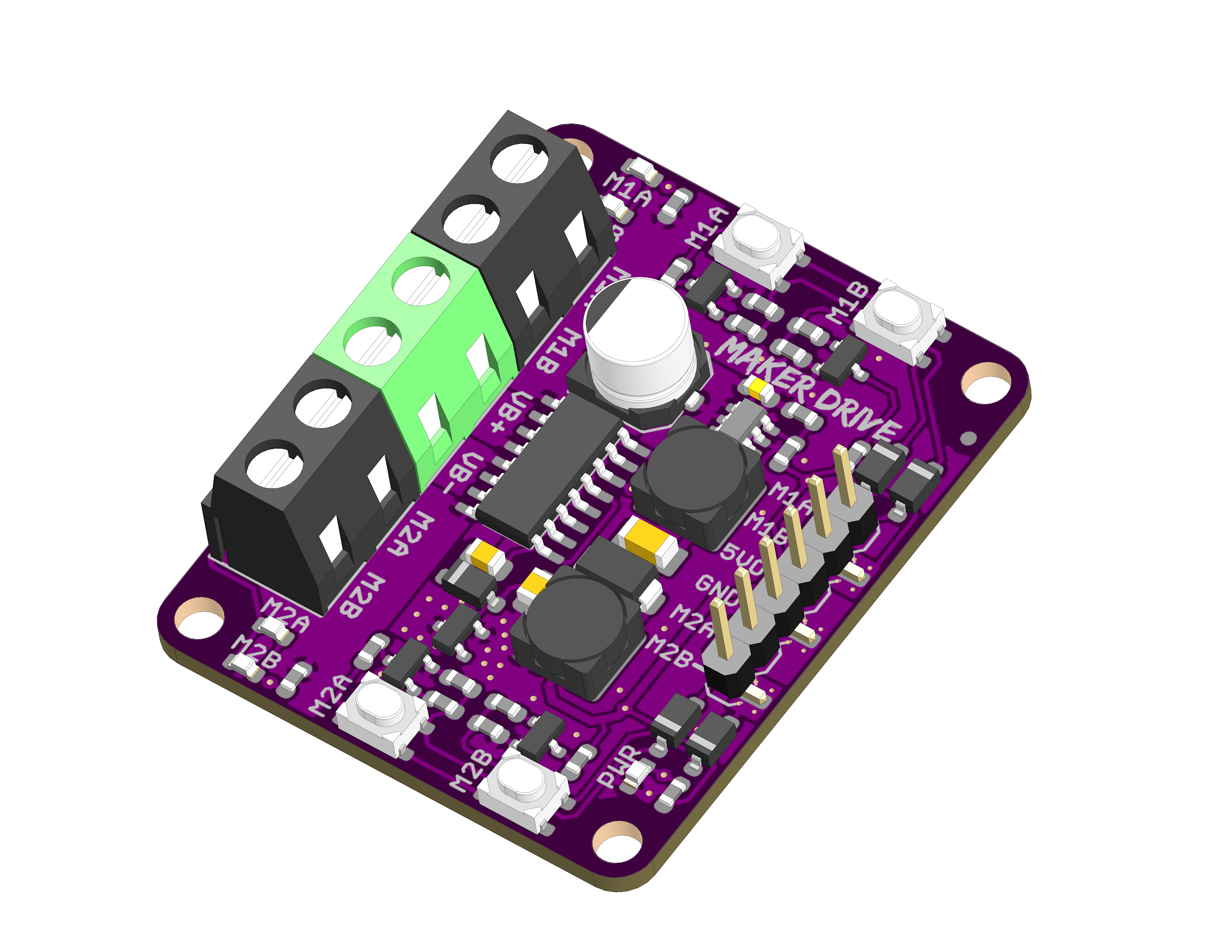


**MAKER-DRIVE**

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



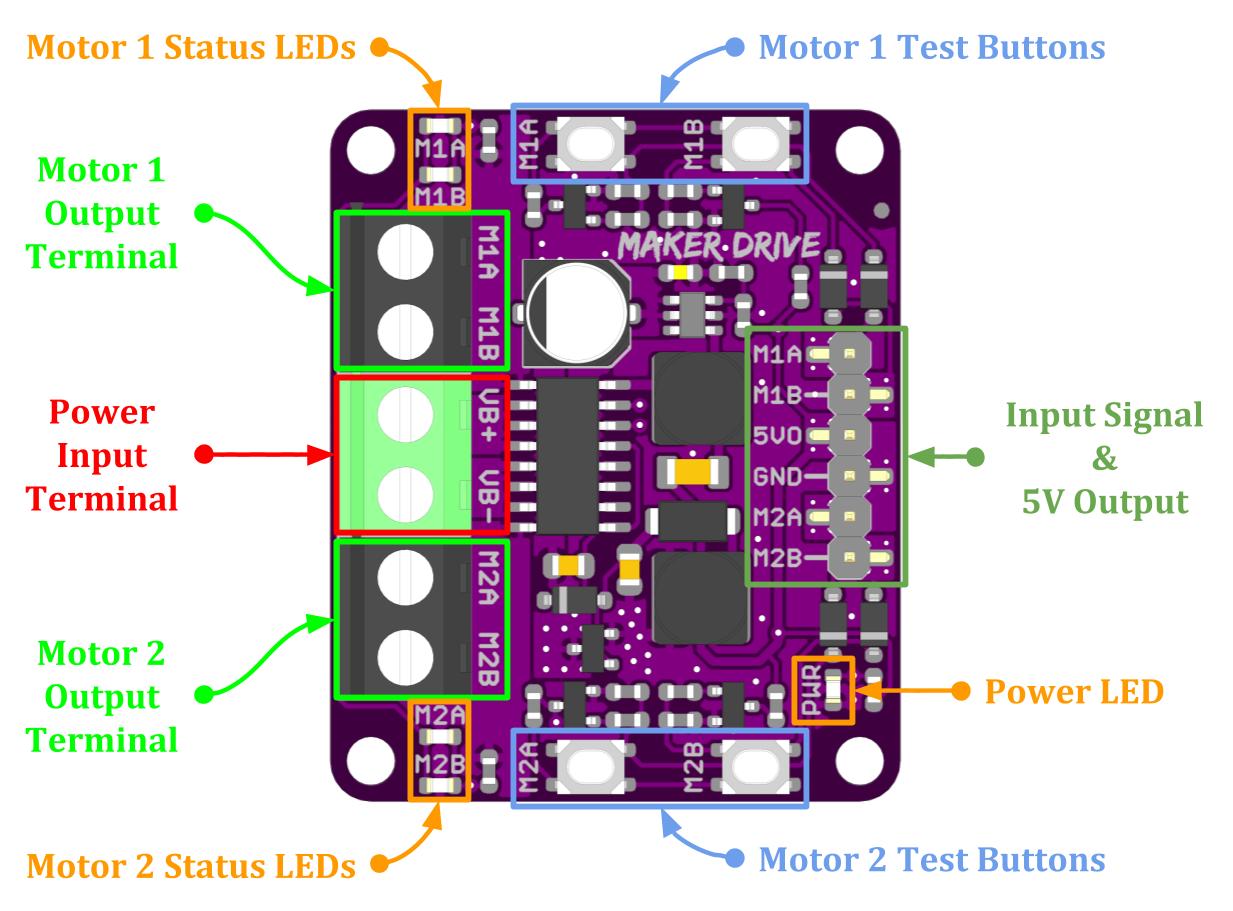
Datasheet

Rev 1.0

Feb 2019

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1. BOARD LAYOUT & FUNCTION



*Figure 1: MAKER-DRIVE Board Functions*

|  |  |
| --- | --- |
| **Function** | **Description** |
| **Power Input Terminal** | Connect to battery.   * VB+ : Positive * VB- : Negative |
| **Motor Output Terminal** | Connect to motor terminal.  Motor direction depends on the polarity. |
| **Power LED** | Turn on when power up. |
| **Motor Status LEDs** | Turn on when the motor is running.   * M1A / M2A : Forward\* * M1B / M2B : Backward\* |
| **Test Buttons** | Press to test the functionality of the motor driver.  Motor will run at full speed.   * M1A / M2A : Forward\* * M1B / M2B : Backward\* |
| **Input Signal &**  **5V Output** | Input signal from microcontroller to control the motor.  +5V output can be used to power the microcontroller.   * M1A : PWM Input A for motor 1. * M1B : PWM Input B for motor 1. * 5VO : DC +5V Output (Maximum 200mA) * GND : Ground * M2A : PWM Input A for motor 2. * M2B : PWM Input B for motor 2. |

*Table 1: MAKER-DRIVE Board Functions*

* *Actual motor direction is depending on the motor connection.*

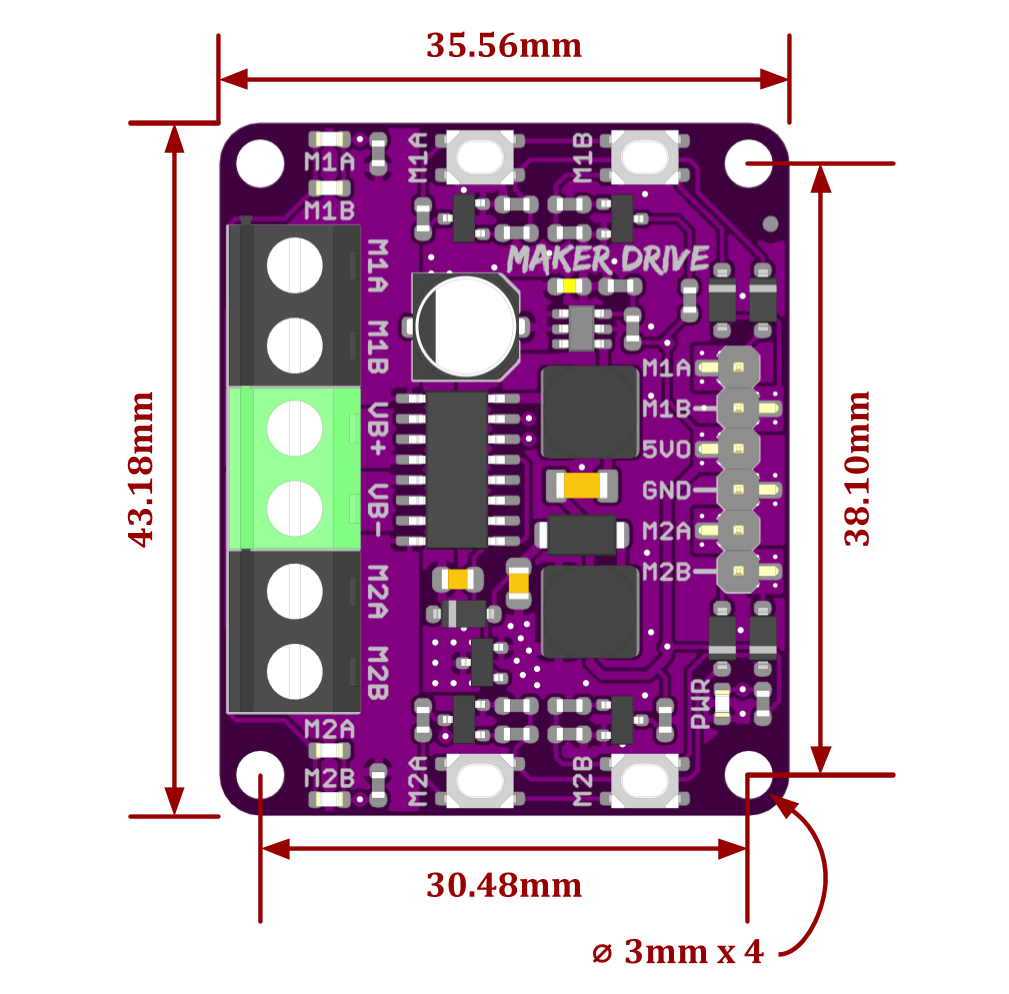
*Swapping the connection (MA & MB) will reverse the direction.*

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 |

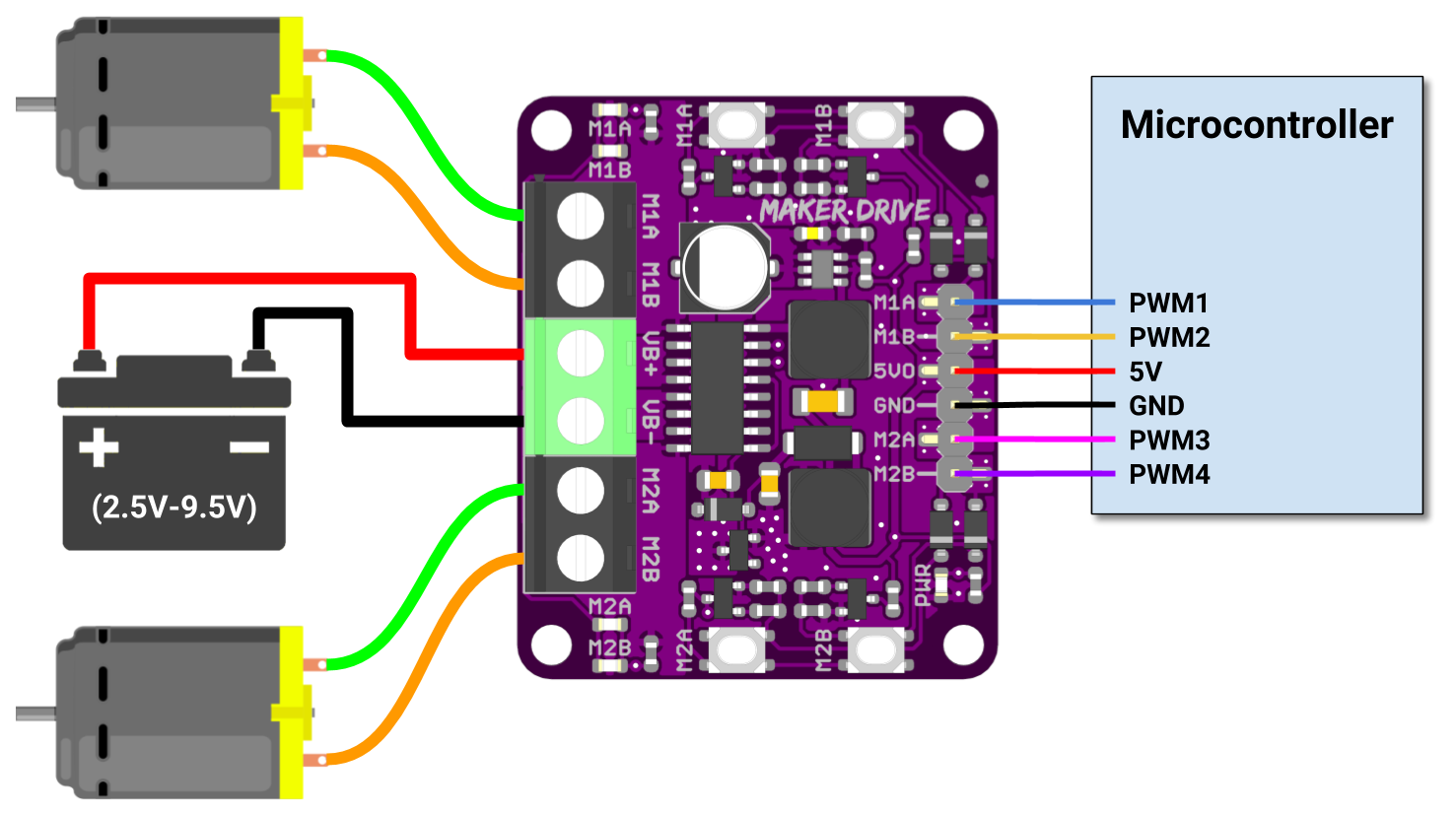
*Table 2: MAKER-DRIVE Absolute Maximum Ratings*

3. DIMENSION



*Figure 2: MAKER-DRIVE Dimension*

4. INTERFACE



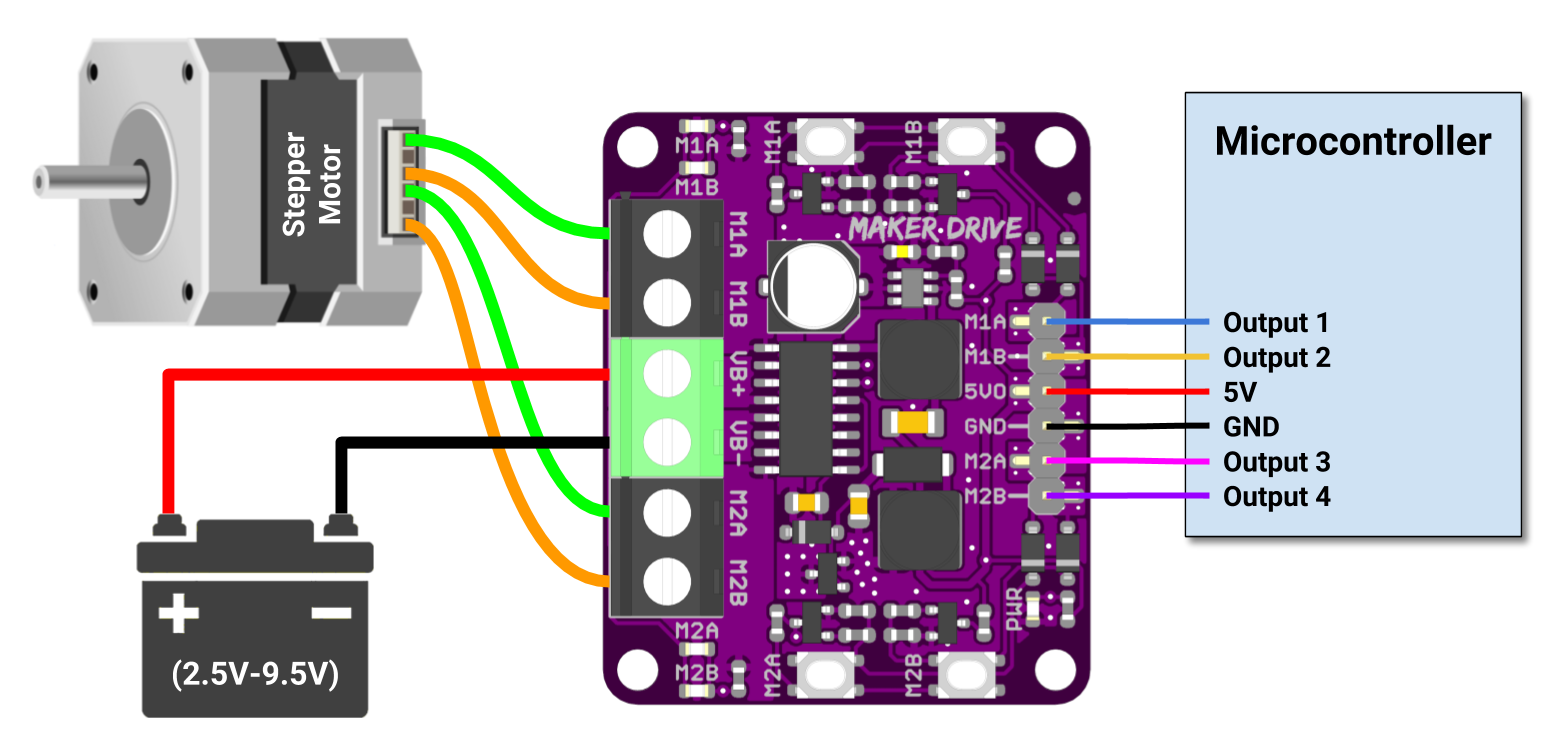
*Figure 3: Connection Diagram for Brushed DC Motor*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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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