1. BOARD LAYOUT & FUNCTION
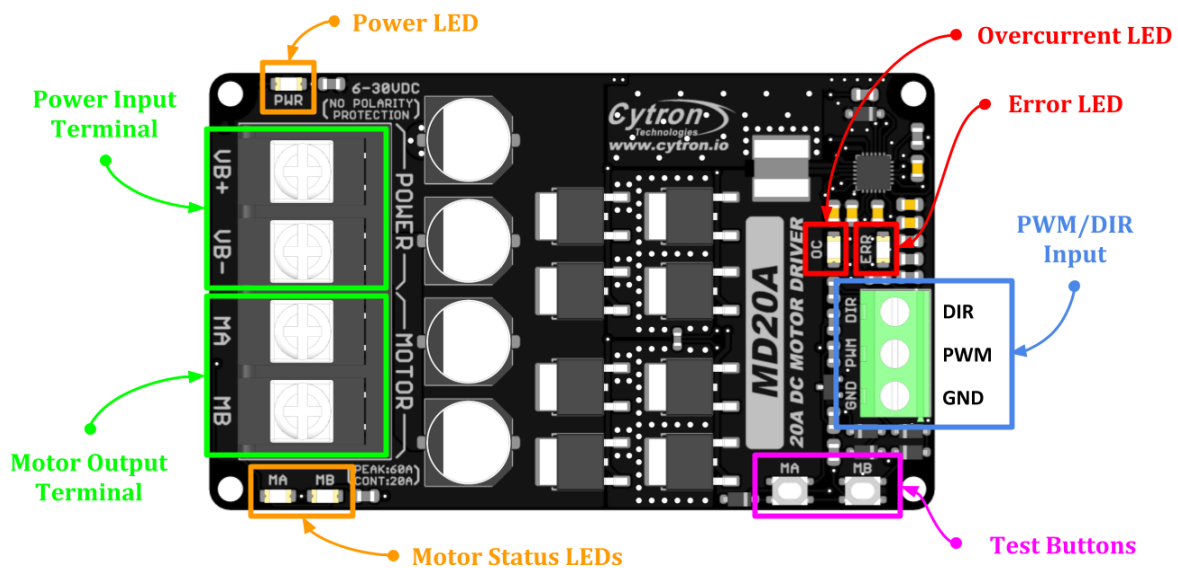

Figure 1: MD20A Board Functions

Function	Description
Power Input Terminal	Connect to battery. ● VB+ : Positive ● VB- : Negative *Warning : Connecting in reverse polarity will damage the motor driver instantaneously.*
Motor Output Terminal	Connect to motor terminal. Motor direction is depending on the polarity.
Power LED	Turn on when power up.
Motor Status LEDs	Turn on when the motor is running. ● MA : Forward* ● MB : Backward*
Error LED	Turn on during undervoltage shutdown or hardware fault. Please contact support@cytron.io for more information.
OC (Overcurrent) LED	Turn on when current limiting is in action. Current limit threshold is depending on the board temperature.
Test Buttons	Press to test the functionality of the motor driver. Motor will run at full speed. ● MA : Forward* ● MB : Backward*
PWM/DIR Input	Control the motor with PWM & DIR signal. ● DIR : Direction input. ● PWM : PWM input for motor speed control. ● GND : Signal ground.

Table 1: MD20A 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		6	30	V
2	Maximum Motor Current	Continuous	-	20	A
		Peak *1	-	60	A
3	Logic Input Voltage (PWM & DIR)	Low Level	0	0.8	V
		High Level	1.5	15	V
4	PWM Frequency *(Output frequency is same as input frequency)*	Standard	DC	20	KHz
		Extended *2	20	40	KHz

Table 2: MD20A Absolute Maximum Ratings

*1 *Peak current is limited by the overcurrent protection circuit. Actual current limit is depending on board temperature. Value shown is at room temperature (25 - 30 degree Celsius).*

*2 When the PWM operates in extended frequency range, continuous motor current will be reduced.
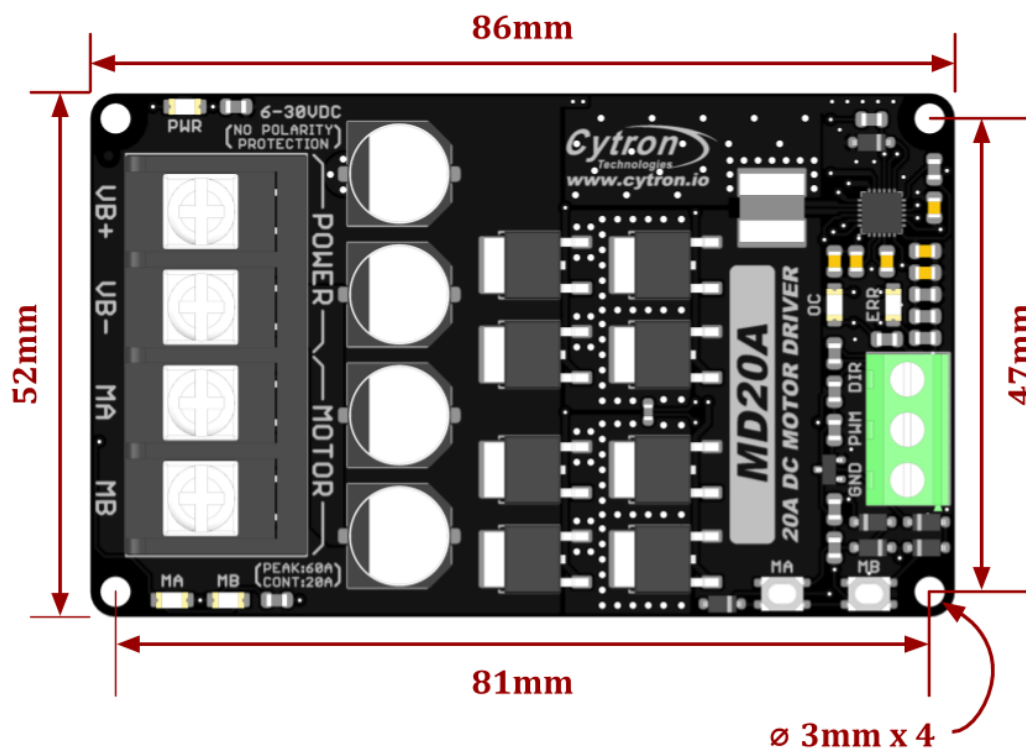
3. DIMENSION
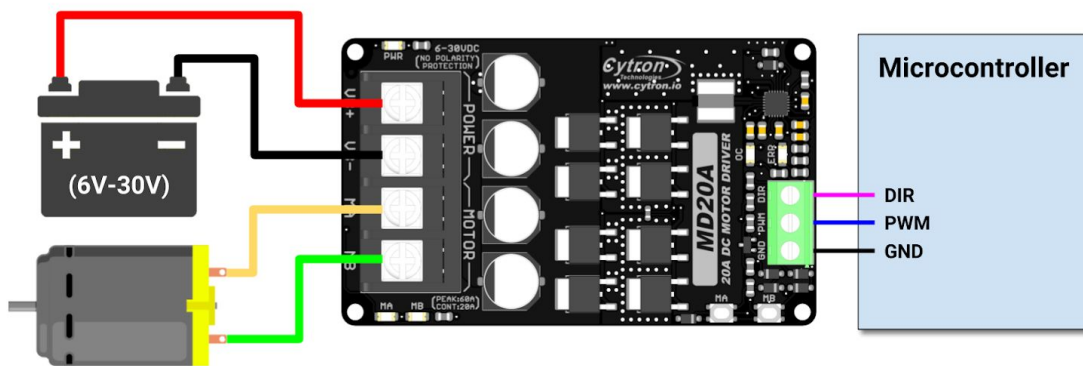

Figure 2: MD20A Dimension

4. INTERFACE

Figure 3: PWM & DIR Input Connection Diagram

PWM	DIR	Output A (MA)	Output B (MB)	Motor
Low	**X (Don't Care)**	Low	Low	Brake
High	**Low**	High	Low	Forward*
High	**High**	Low	High	Backward*

Table 3: PWM/DIR Input Truth Table

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