DC Motor

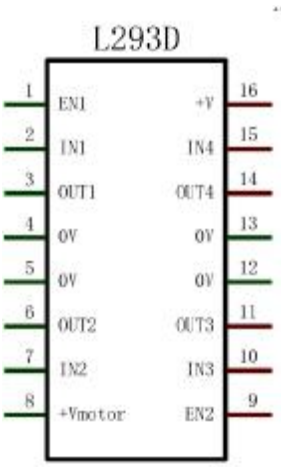
Overview

This lesson will teach you how to control the DC motor to turn, reverse and stop.

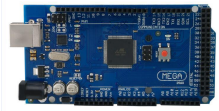
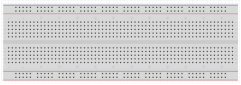
Specification

Motor:
Rated Voltage: DC 6V
Speed: 5000 RPM
L293d:
Please view L293d-datasheet.pdf.
Path: \Public_materials\Datasheet\ L293d -datasheet.pdf

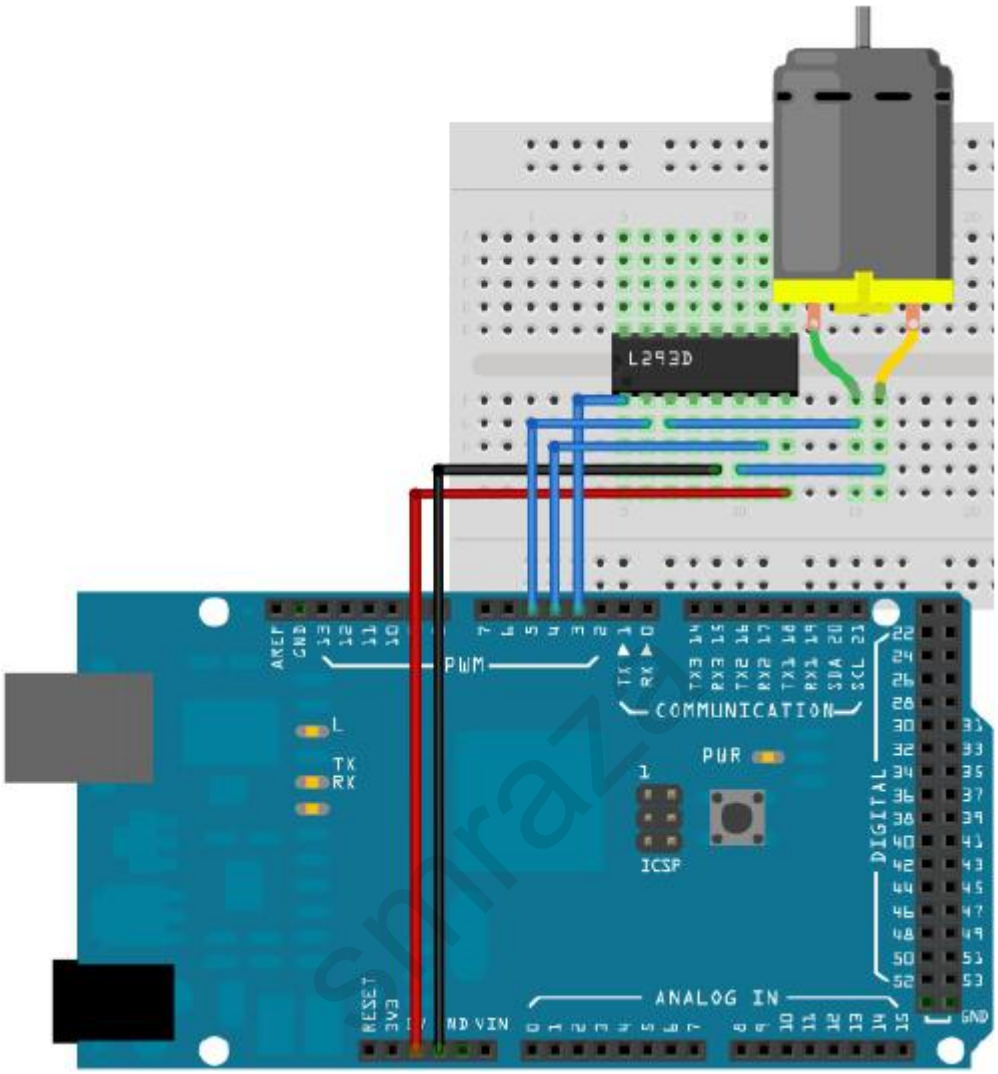
Pin definition



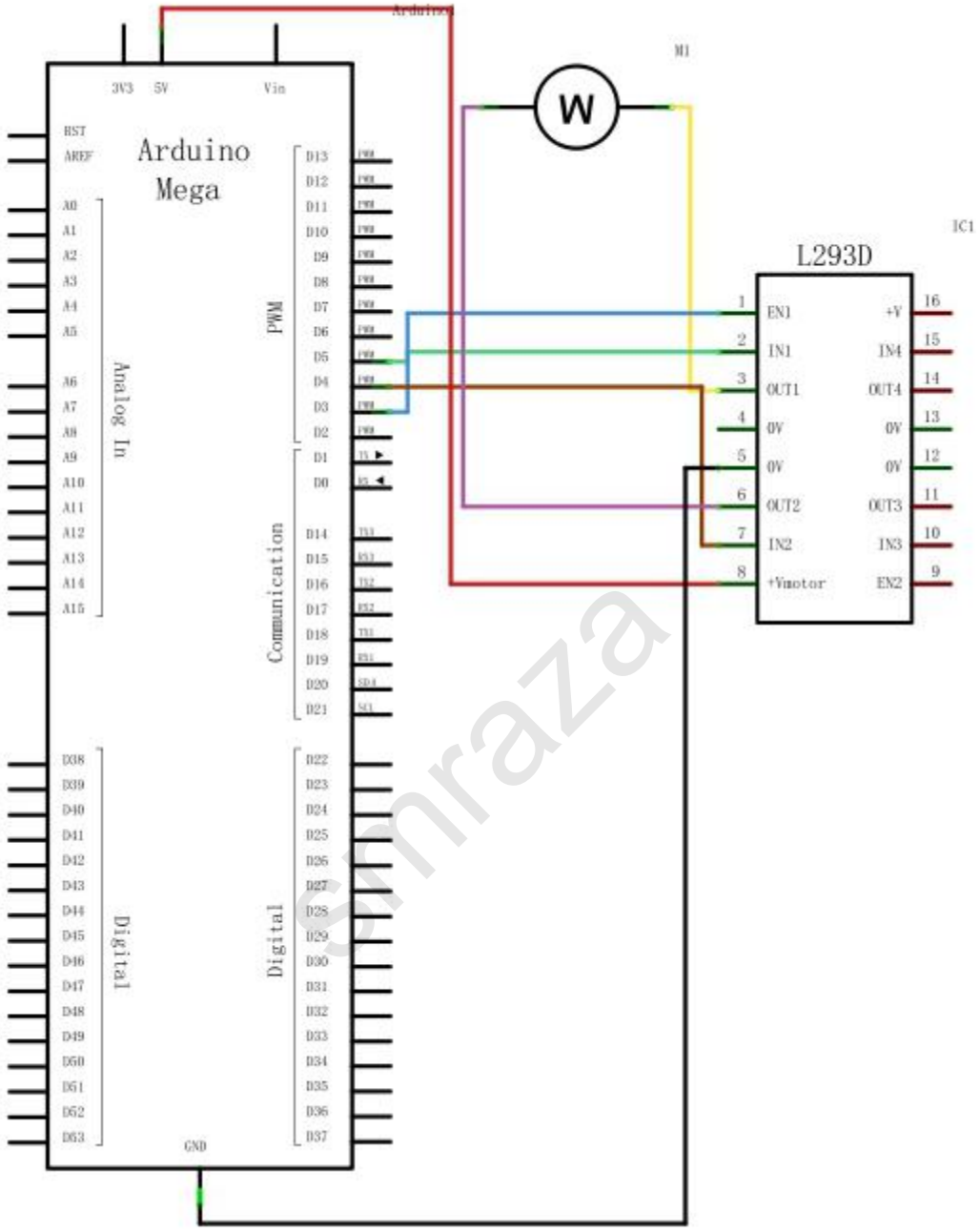
Hardware required

Material diagram	Material name	Number
	DC Motor	1
	IC L293D	1
	USB Cable	1
	MEGA 2560	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



Connection:



Note:
Pay attention to the direction of the IC L293D.

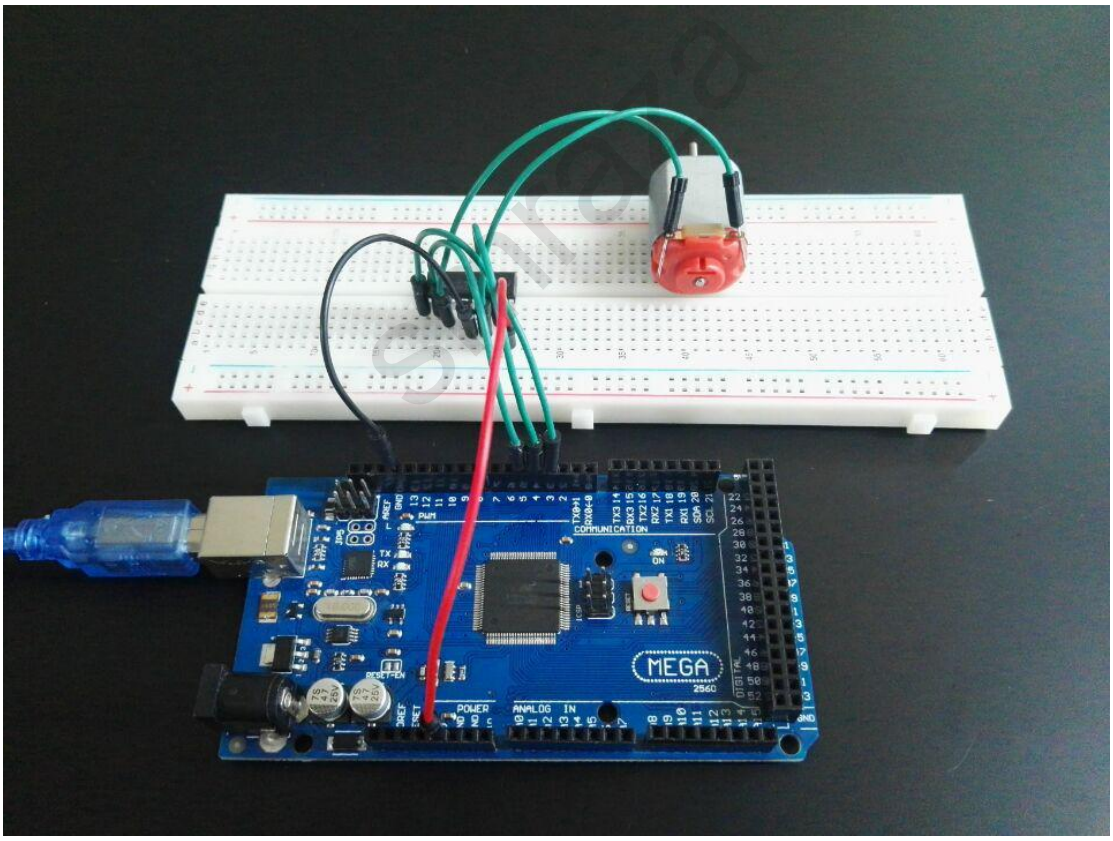
Sample code

Note: sample code under the **Sample code** folder

```
#define ENABLE 3
#define DIRB 4
#define DIRA 5
int i;
void setup()
{
    //---set pin direction
    pinMode(ENABLE,OUTPUT);
    pinMode(DIRA,OUTPUT);
    pinMode(DIRB,OUTPUT);
    Serial.begin(9600);
}

void loop()
{
    //---back and forth example
    Serial.println("One way, then reverse");
    digitalWrite(ENABLE,HIGH); // enable on
    for (i=0;i<5;i++) {
        digitalWrite(DIRA,HIGH); //one way
        digitalWrite(DIRB,LOW);
        delay(500);
        digitalWrite(DIRA,LOW); //reverse
        digitalWrite(DIRB,HIGH);
        delay(500);
    }
    digitalWrite(ENABLE,LOW); // disable
    delay(4000);

    Serial.println("fast Slow example");
    //---fast/slow stop example
    digitalWrite(ENABLE,HIGH); //enable on
    digitalWrite(DIRA,HIGH); //one way
    digitalWrite(DIRB,LOW);
    delay(1000);
    digitalWrite(ENABLE,LOW); //slow stop
    delay(3000);
    digitalWrite(ENABLE,HIGH); //enable on
    digitalWrite(DIRA,HIGH); //one way
    digitalWrite(DIRB,LOW);
    delay(1000);
    digitalWrite(DIRA,LOW); //fast stop
```

```
    delay(3000);

    //Serial.println("PWM full then slow");
    //---PWM example, full speed then slow
    digitalWrite(ENABLE,HIGH); //enable on
    digitalWrite(DIRA,HIGH); //one way
    digitalWrite(DIRB,LOW);
    delay(2000);
    analogWrite(ENABLE,128); //half speed
    delay(2000);
    digitalWrite(ENABLE,LOW); //all done
    delay(10000);
}
```

Example picture



Language reference

Null

Application effect

You will see the DC motor will be turning, turning and stopping.

****

* About Smraza:
* We are a leading manufacturer of electronic components for Arduino and Raspberry Pi.
* Official website: http://www.smraza.com/
* We have a professional engineering team dedicated to providing tutorials and support to help you get started.
* If you have any technical questions, please feel free to contact our support staff via email at support@smraza.com
* We truly hope you enjoy the product, for more great products please visit our
Amazon US store: http://www.amazon.com/shops/smraza
Amazon CA store: https://www.amazon.ca/shops/AMIHZKLK542FQ
Amazon UK store: http://www.amazon.co.uk/shops/AVEAJYX3AHG8Q
Amazon DE store: http://www.amazon.de/shops/AVEAJYX3AHG8Q
Amazon FR store: http://www.amazon.fr/shops/AVEAJYX3AHG8Q
Amazon IT store: http://www.amazon.it/shops/AVEAJYX3AHG8Q
Amazon ES store: https://www.amazon.es/shops/AVEAJYX3AHG8Q
****