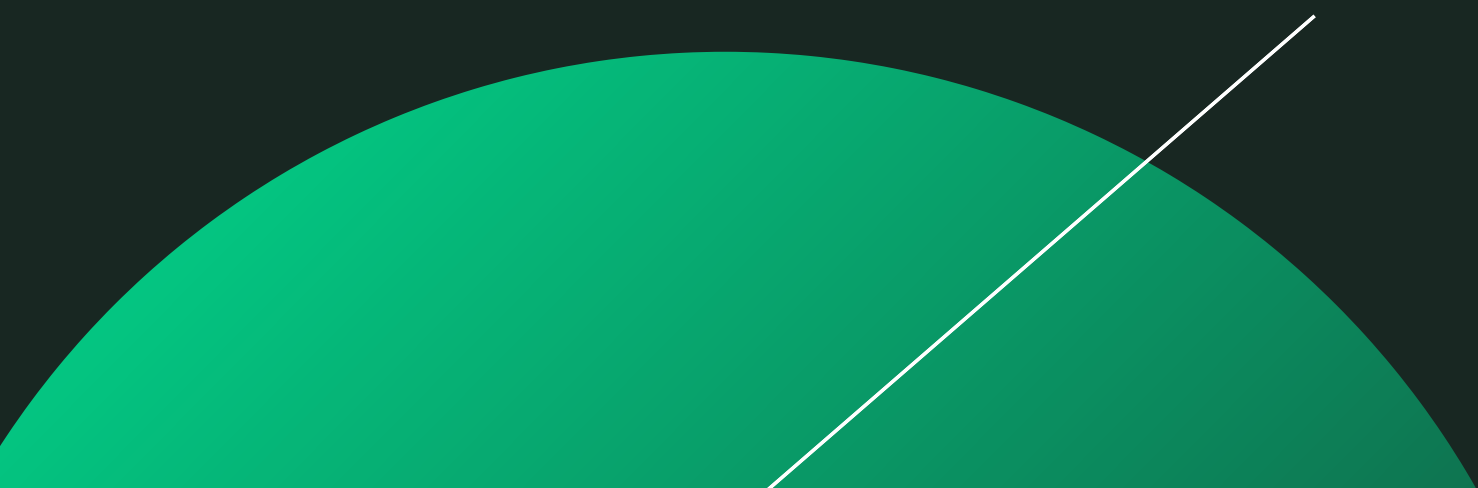
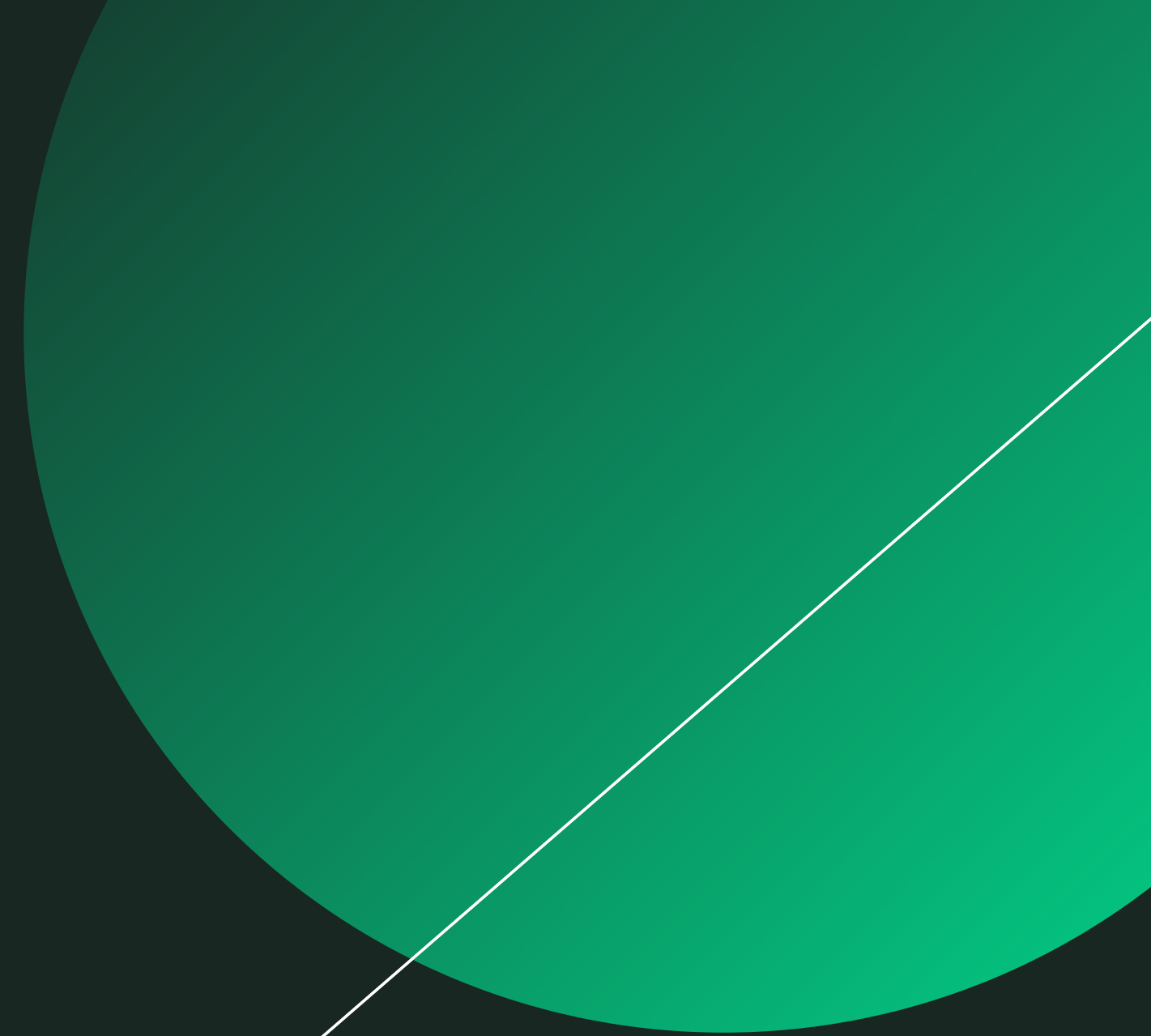


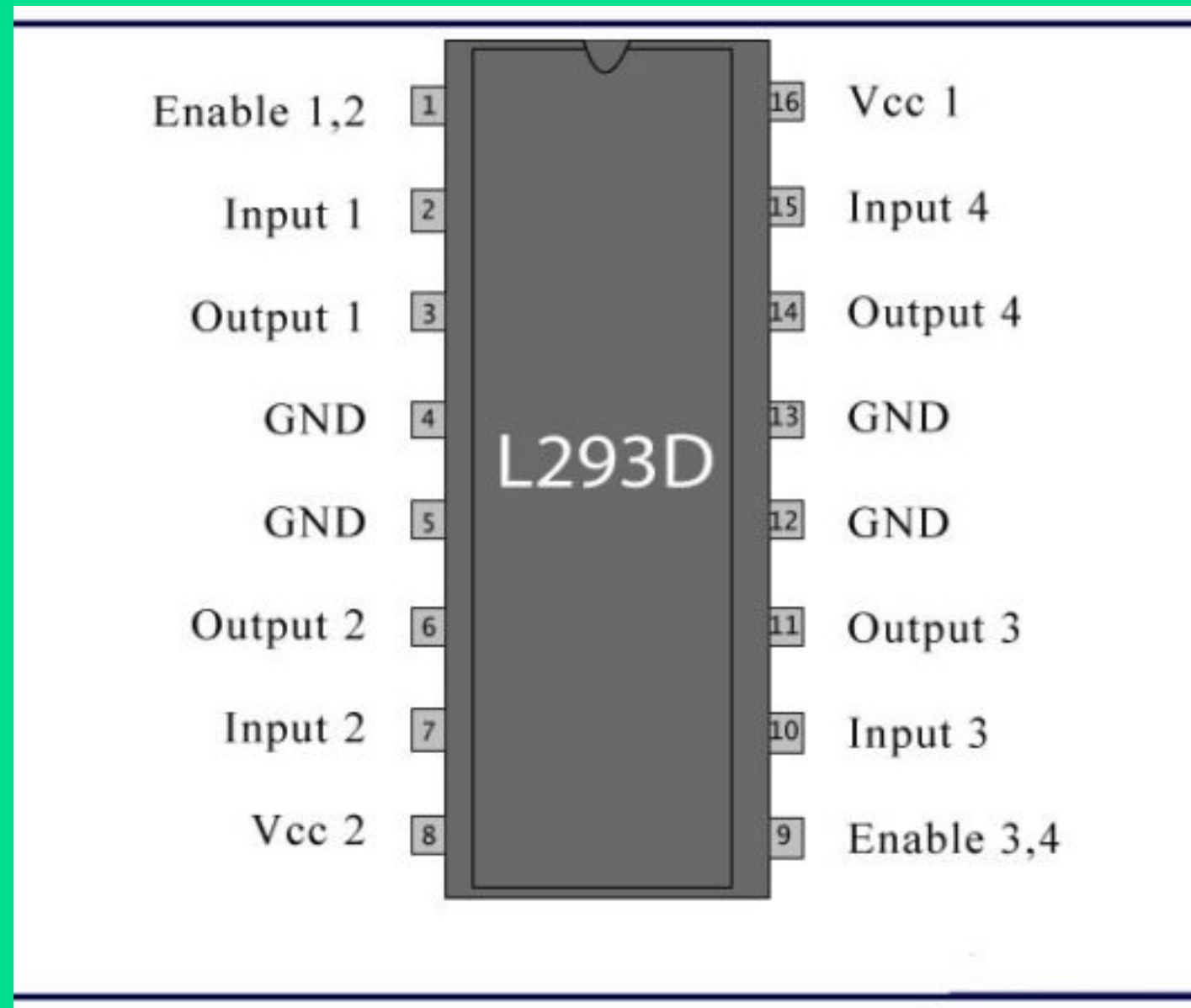
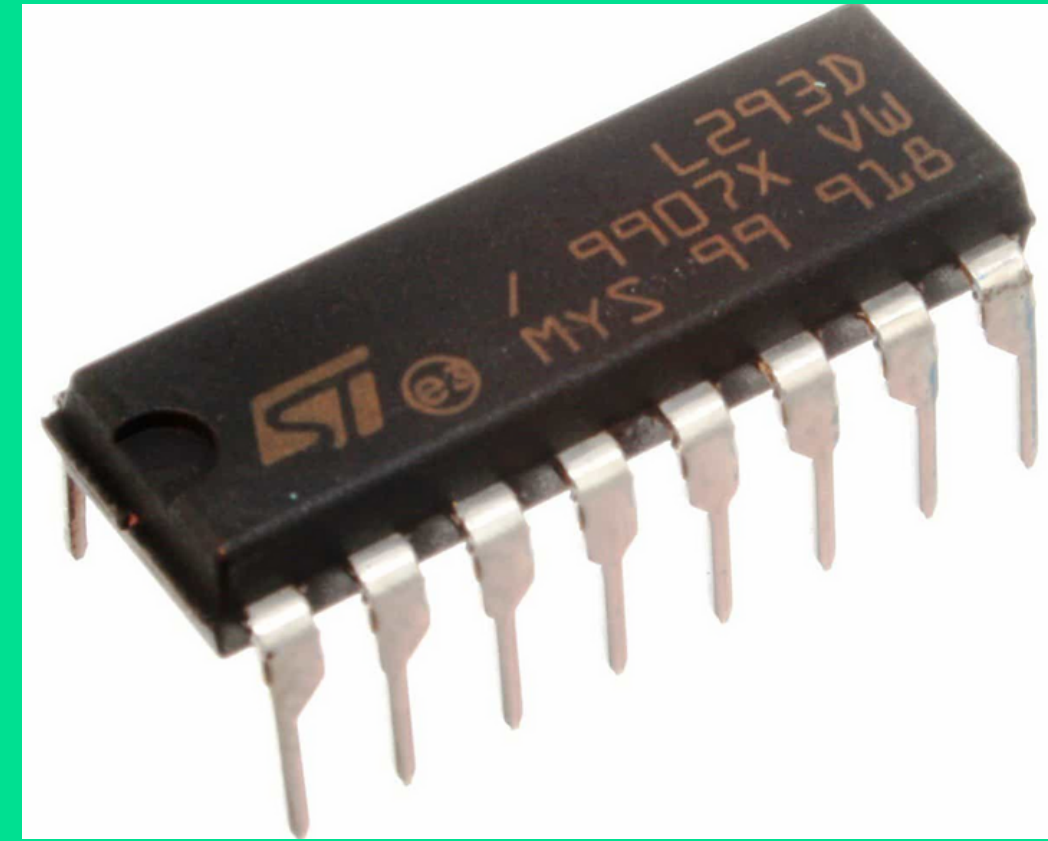
L293D Motor Driver IC



Introduction

A motor driver is an integrated circuit chip which is usually used to control motors in autonomous robots. Motor driver act as an interface between Arduino and the motors . The most commonly used motor driver IC's are from the L293 series such as L293D, L293NE, etc. These ICs are designed to control 2 DC motors simultaneously. L293D consist of two H-bridge. H-bridge is the simplest circuit for controlling a low current rated motor. We will be referring the motor driver IC as L293D only. L293D has 16 pin

L293D Motor Driver IC



The Pins

Concept

It works on the concept of H-bridge. H-bridge is a circuit which allows the voltage to be flown in either direction. As you know voltage need to change its direction for being able to rotate the motor in clockwise or anticlockwise direction, Hence H-bridge IC are ideal for driving a DC motor. In a single L293D chip there are two h-Bridge circuit inside the IC which can rotate two dc motor independently. Due its size it is very much used in robotic application for controlling DC motors.

There are two Enable pins on L293d. Pin 1 and pin 9, for being able to drive the motor, the pin 1 and 9 need to be high. For driving the motor with left H-bridge you need to enable pin 1 to high. And for right H-Bridge you need to make the pin 9 to high. If anyone of the either pin1 or pin9 goes low then the motor in the corresponding section will suspend working. It's like a switch.

Pins

- 1 – Enable 1-2, when this is HIGH the left part of the IC will work and when it is low the left part won't work.
- 2 – INPUT 1, when this pin is HIGH the current will flow through output 1
- 3 – OUTPUT 1, this pin should be connected to one of the terminal of motor
- 4,5 – GND, ground pins
- 6 – OUTPUT 2, this pin should be connected to one of the terminal of motor
- 7 – INPUT 2, when this pin is HIGH the current will flow through output 2
- 8 – VCC2, this is the voltage which will be supplied to the motor.
- 16 – VCC1, this is the power source to the IC. So, this pin should be supplied with 5 V
- 15 – INPUT 4, when this pin is HIGH the current will flow through output 4
- 14 – OUTPUT 4, this pin should be connected to one of the terminal of motor
- 13,12 – GND, ground pins
- 11 – OUTPUT 3, this pin should be connected to one of the terminal of motor
- 10 – INPUT 3, when this pin is HIGH the current will flow through output 3
- 9 – Enable 3-4, when this is HIGH the right part of the IC will work and when it is low the right part won't work