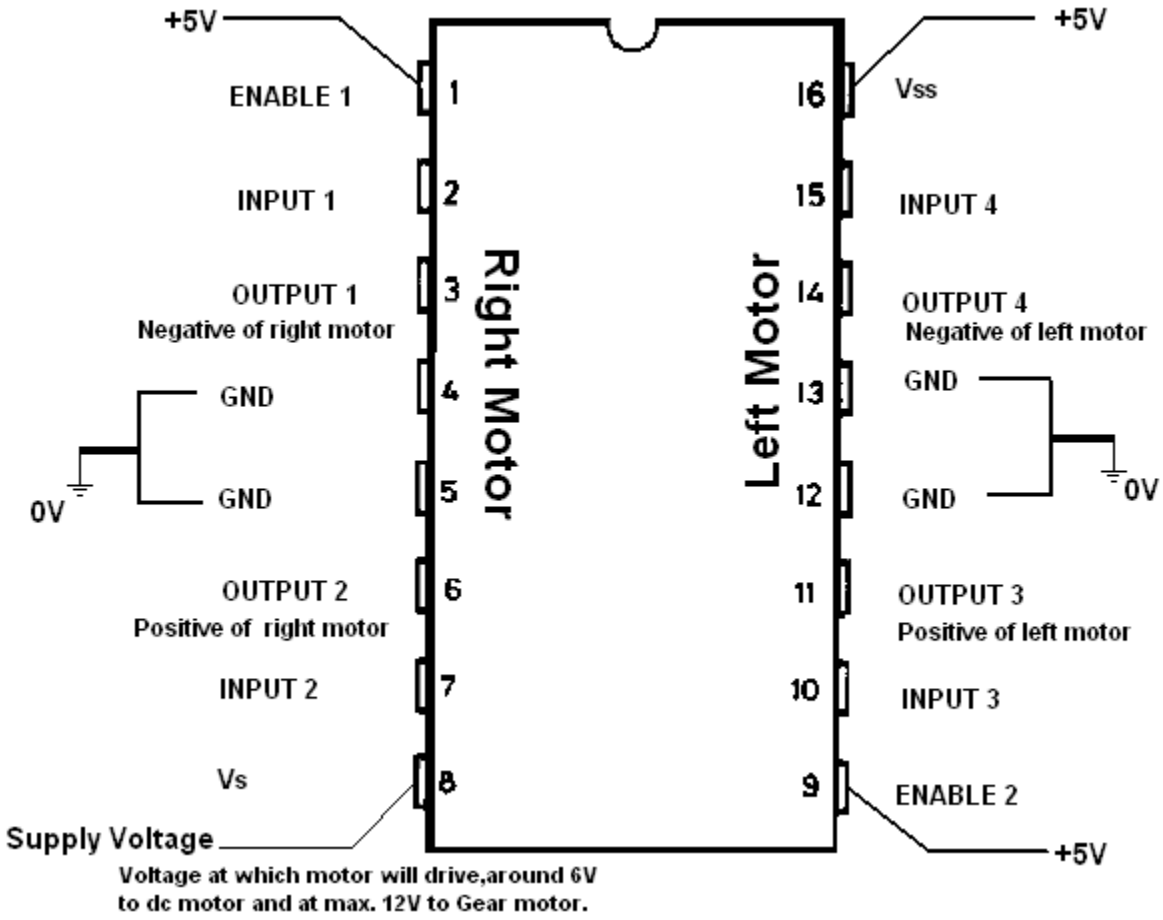
Pin Configuration of L293D:



Electrical Characteristic:

Symbols	Parameter	Testing Condition	Min.	Max.	Units
Vss	Logic Supply Voltage Pin 16		4.5	36	V
Vs	Supply Voltage Pin 8		Vss	36	V
Ven L	Enable Low Voltage Pin 1 and 9		-0.3	1.5	V
Ven H	Enable High Voltage Pin 1 and 9	Vss<=7 Vss>7	2.3 2.3	Vss 7	V
VIL	Input Low Voltage Pin 2, 7, 10 and 15		-0.3	1.5	V
VIH	Input High Voltage Pin 2, 7, 10 and 15	Vss<=7 Vss>7	2.3 2.3	Vss 7	V

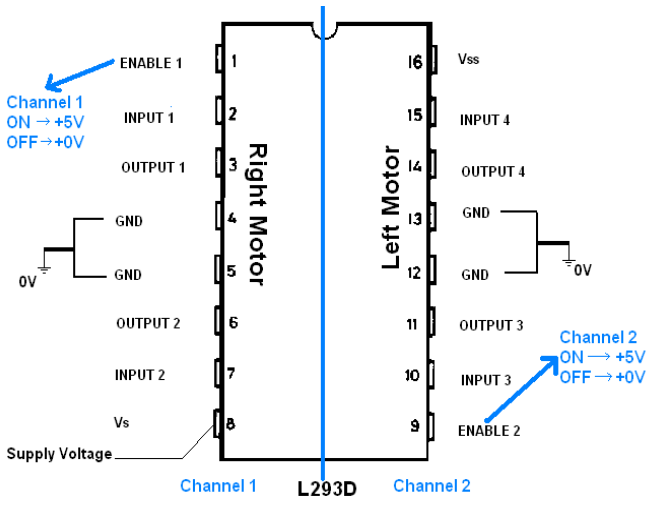
Note:

- Supply voltage(Vss) is the Voltage at which we wish to drive the motor. Generally we prefer 6V for dc motor and 6 to 12V for gear motor, depending upon the rating of the motor.
- Logical Supply Voltage will decide what value of input voltage should be considered as high or low .So if we set Logical Supply Voltage equals to +5V, then -0.3V to 1.5V will be considered as Input Low Voltage and 2.3 V to 5V will be considered as Input High Voltage.
- L293D has 2 Channels .*One channel is used for one motor*.

  Channel 1 - Pin 1 to 8

  Channel 2 - Pin 9 to 16
- Enable Pin is use to enable or to make a channel active .Enable pin is also called as Chip Inhibit Pin.
- All Input(Pin No. 2,7,10and 15) of L293D IC is the output from microcontroller (*ATmega8*).

  Eg-*We connected (Pin No. 2, 7, 10 and 15) of L293D IC to (Pin No. 14,15,16and 17) of ATmega8 respectively in our robots*, because on pin 14 and 15 of ATmega8 we can generate PWM.
- All Output (Pin No. 3, 6,11and 14) of L293D IC goes to the input of Right and Left motor through RMC(4 pin Connector).



- One channel corresponds to one motor.
- Enable pin should be high for activate the corresponding channel.
- Input 1 corresponds to Output 1.

If Enable 1=High (1)
Input1 =High (1), Output1=Vss
Input1 =Low (0), Output1=0

If Enable 1=Low (0)
Input1 =High (1), Output1=0
Input1 =Low (0), Output1=0

Means if Enable pin low, the output will be at 0 always. If its high output depend on input

Similarly Input 2 corresponds to Output 2, Input 3 corresponds to Output 3 and Input 4 corresponds to Output 4.

Vss=+6V

INPUT(Pins 2,7,10,15)	ENABLE(Ven=5V)	OUTPUT (Pins 3,6,11,14) (Vs=6V)
1.2V	4.6V	0V
3.8V	4.9V	6V
4.6V	0.8V	High output impedance
0.5V	0.5V	High output impedance
4.9V	2.9V	?????
0.9V	1.1V	?????
1.3V	4.1V	?????

Refer Electrical Characteristics

- OUTPUT 1 --- Negative Terminal of Right Motor
- OUTPUT 2 --- Positive Terminal of Right Motor
- OUTPUT 3 --- Positive Terminal of Left Motor
- OUTPUT 4 --- Negative Terminal of Left Motor

Lets check the outputs for some inputs:

Input 1	***Input 2***	***Input 3***	***Input 4***	***Output 1***	***Output 2***	***Output 3***	***Output 4***	***Motors Output***		***Movement***
								Right	***Left***	
Low	High	High	Low	0	Vss	Vss	0	Straight	Straight	Straight
Low	High	Low	Low	0	Vss	0	0	Straight		Left Turn
Low	Low	High	Low	0	0	Vss	0	Stop		Right Turn
Low	High	Low	High	0	Vss	0	Vss			Sharp Left
High	Low	High	Low	Vss	0	Vss	0			Sharp Right
High	Low	Low	High	Vss	0	0	Vss			Backward