# L298N Modules

| Basic Attributes | | | |
|---|---|---|---|
| **Name** | Double H Bridge Motor Driver Module | **Working mode** | Drived by H bridge (double lines) |
| **Control chip** | L298N （ ST） | | |
| **Logical voltage** | 5V | **Driving voltage** | 5V — 35V |
| **Logical current** | 0mA-36mA | **Driving current** | 2A (MAX single bridge) |
| **Storage temperature** | （ -20 ℃）—（ +135 ℃） | **Maximum power** | 25W |
| **weight** | 30g | **Periphery dimension** | 43*43*27mm |

## Product features:

1. Using L298N made by ST company as the control chip, the module has such characteristics as strong driving ability, low calorific value and strong anti-interference ability.

2. This module can use built-in 78M05 for electric work via a driving power supply part. But to avoid the damage of the voltage stabilizing chip, please use an external 5V logic supply when using more than 12V driving voltage.

3. Using large capacity filter capacitor, this module can follow current to protect diodes, and improve the reliability

## Real figure ：

L298N is a kind of high voltage, high current motor driver chip produced by ST company. Having 15 pins as package, this chip has such features as high working voltage (maximum voltage up to 46V), large output current (instantaneous peak current up to 3A, continuous working current 2A) and 25W of rated power. Two built-in H birdge high voltage and large current full bridge drivers can be used to drive the DC motor and stepper motor, relay coil and so on. Using standard logic level signal control, it has two enable control ends. It permits or prohibites device having a logic power supply input without the impact of input signal, which enables the internal logic circuit part works at low voltage. The chip can connects to external detecting resistor to give the variations to the control circuit. Using L298N chip to drive the motor, this chip can drive a stepping motor or four phase stepping motor, and two DC motors as well.

This module is integrated with a built-in 5V power. When the drive voltage is 7V-35V, it can enable the onboard 5V logic power supply; afterthe power supply, don't input voltage in the interface+5V power supply, but you can lead the 5V for external use.

when ENA enable IN1 IN2 control OUT1 OUT2

when ENB enable IN3 IN4 control OUT3 OUT4

Applied cases:

1. Driving stepper motor

The connection of driving a common 4 line 2 phase electric motor is shown in below figure

after enable ENA ENB

Input the following driving timing from IN1-IN4 ’then the speed and direction of the stepper motor can be controlled

| stepper motor | signal input | step 1 | step 2 | step 3 | step 4 | teturn to step1 |
|---|---|---|---|---|---|---|
| corotation | IN1 | 0 | 1 | 1 | 1 | return |
| | IN2 | 1 | 0 | 1 | 1 | return |
| | IN3 | 1 | 1 | 0 | 1 | return |
| | IN4 | 1 | 1 | 1 | 0 | return |
| reversal | IN1 | 1 | 1 | 1 | 0 | return |
| | IN2 | 1 | 1 | 0 | 1 | return |
| | IN3 | 1 | 0 | 1 | 1 | return |
| | IN4 | 0 | 1 | 1 | 1 | return |

2 Driving DC motor

Because the module is drived by double H bridge,it can drive two motors simultaneously.

The connecting method is shown inbelow figure

after enable ENA ENB

You can imput the speed and direction of PWM signal drive motor 1 from IN1 IN2

You can imput the speed and direction of PWM signal drive motor 2 from IN1 IN2

The signal is shown in the figure

| DC motor | rotate | IN1 | IN2 | IN3 | IN4 | speed adjust PWM signal | |
|---|---|---|---|---|---|---|---|
| | | | | | | end | end |
| M1 | corotation | high | low | / | / | high | / |
| | reversal | low | high | / | / | high | / |
| | stop | low | low | / | / | high | / |
| M2 | corotation | / | / | high | low | / | high |
| | reversal | / | / | low | high | / | high |
| | stop | / | / | low | low | / | high |