

PWM LED DIMMER

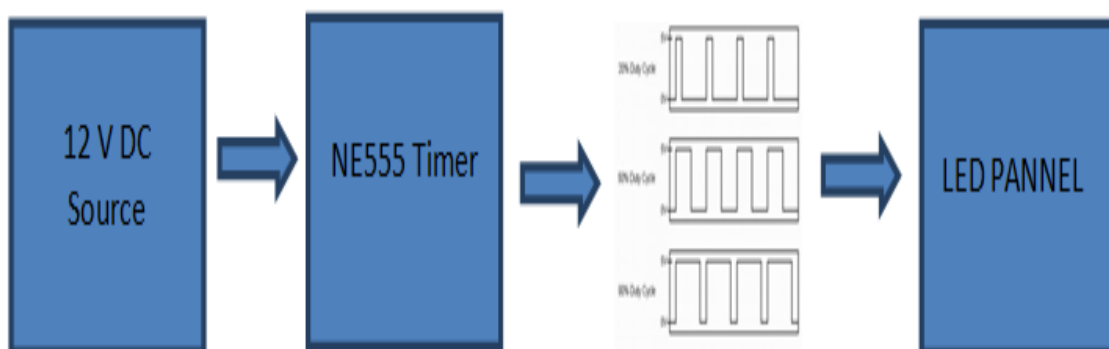
Introduction

In this project, we will see a PWM based LED Dimmer using 555 Timer IC. The main principle of this circuit is to generate a Pulse Width Modulation PWM Signal with the help of the good old reliable 555 Timer IC and vary the power being delivered to the LEDs and hence achieving the effect of LED Dimming.

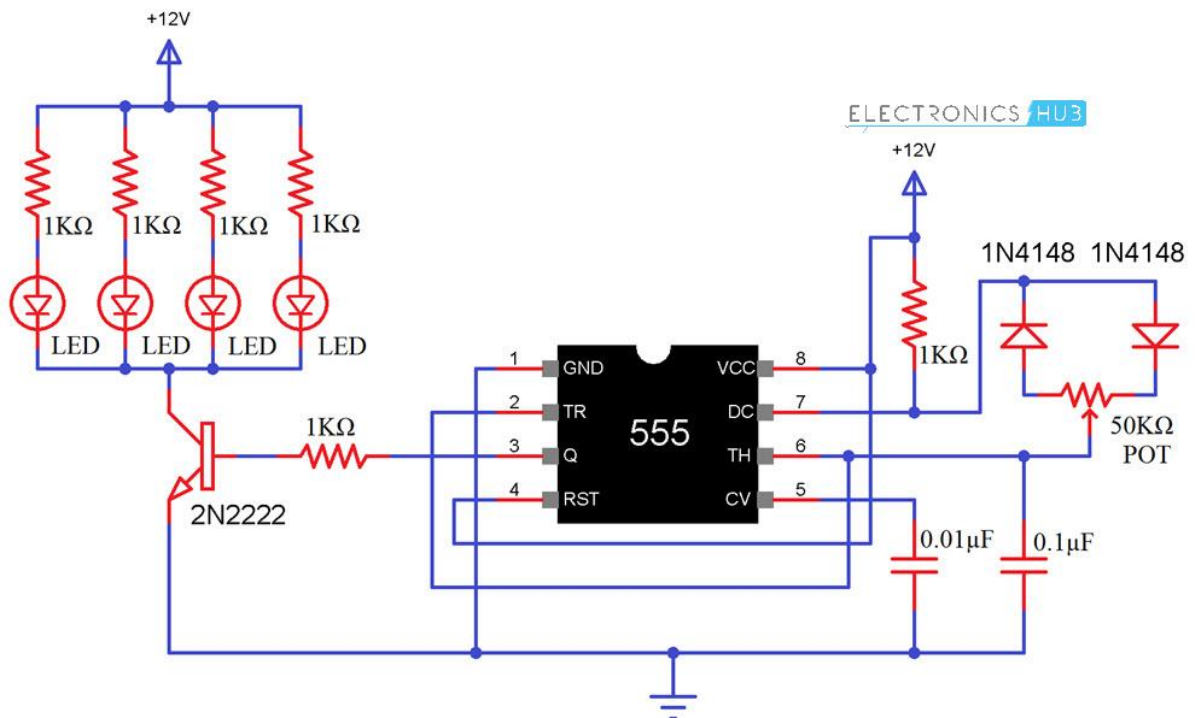
The Pulse Width Modulation (PWM) plays an important role in controlling the a lot of circuits. If you want to control the speed of the motor, PWM plays a key role. Here, in our project, the PWM Technique is used for dimming the LEDs.

Using PWM technique, the mount of power delivered to a device is varied and hence, if we can control the pulse width of the signal, we can easily control the device like making a simple DC Motor to rotate slow or fast or to dim the intensity of an LED.

Block Diagram



Circuit Diagram



Component

- 555 Timer IC
- 1KΩ Resistor x 6
- Red LEDs x 4
- 2N2222 NPN Transistor
- 0.1μF Capacitor
- 0.01μF Capacitor
- 50KΩ Potentiometer
- 1N4148 Diodes
- 12V Power Supply
- Mini Breadboard