

TASK-2

Design a Schematic + PCB (using Easy EDA / Altium / etc.) for a bi-stable multi vibrator using 555 timers and Opto-coupler relays for controlling two 230V/AC mains loads.

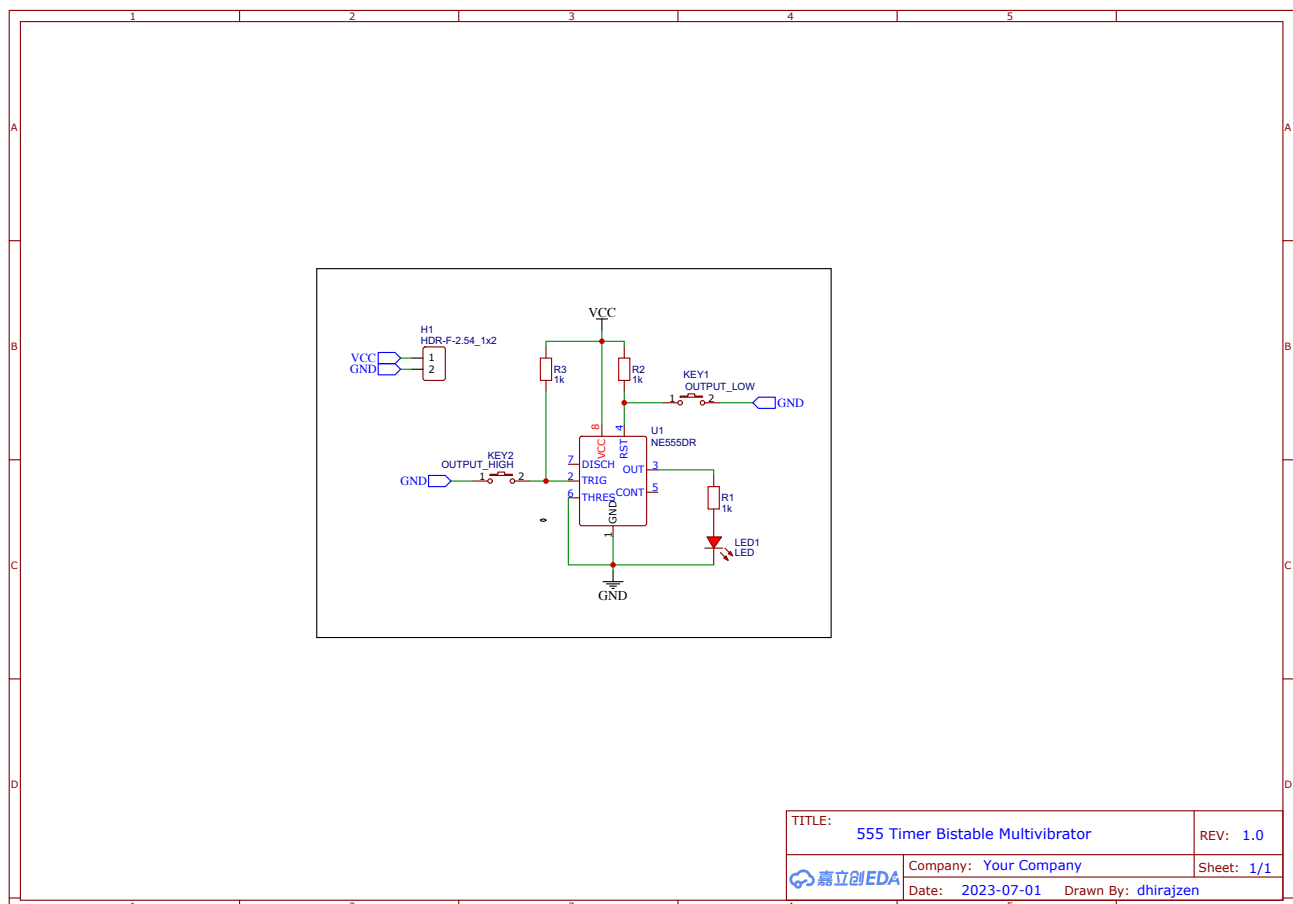
555 TIMER BISTABLE MULTIVIBRATOR

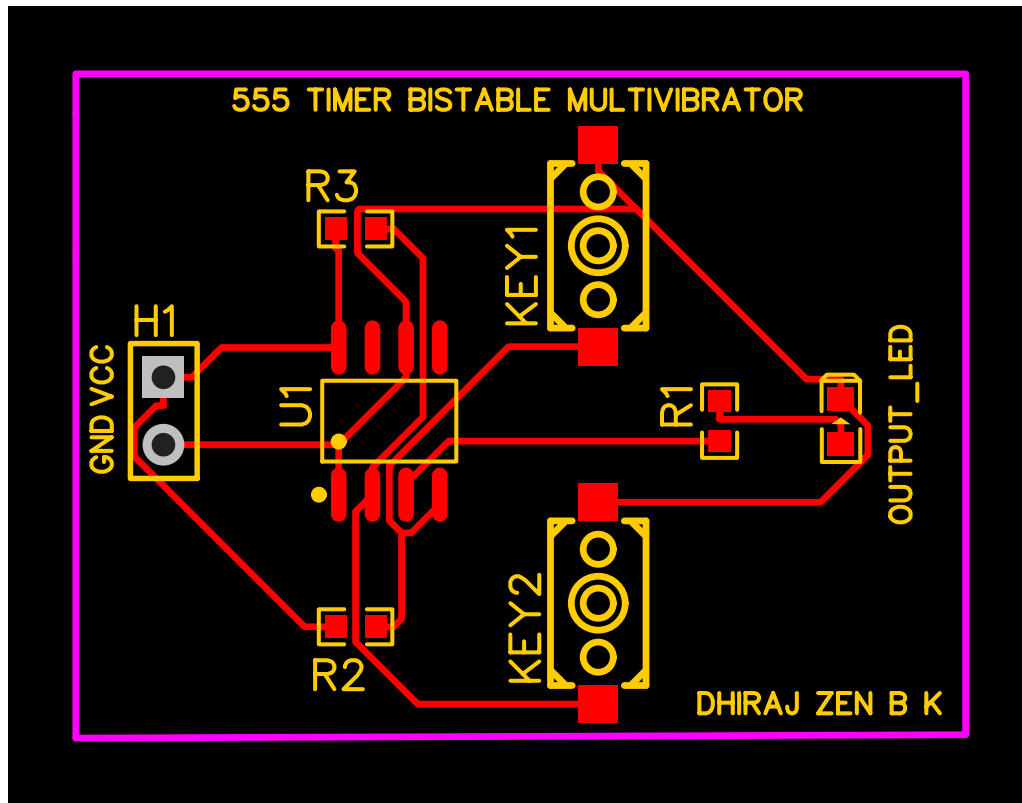
I have designed a bistable multivibrator using the 555 timer IC.

The output becomes low and remains low when KEY1 is pressed. Similarly, the output becomes high and remains high when KEY2 is pressed.

The output will drive an led through which we can observe the output state.

SCHEMATIC –



PCB DESIGN –

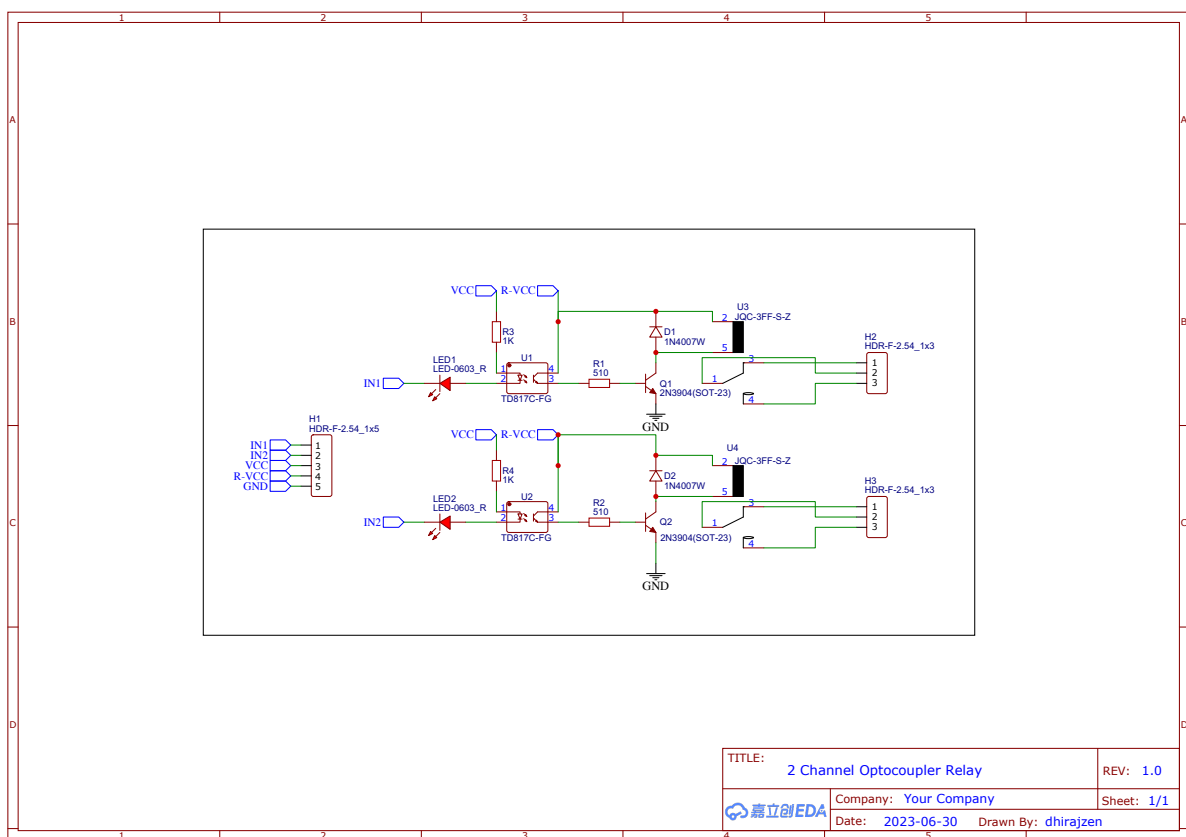
2 CHANNEL OPTOCOUPLER RELAYS

In this design I have used photocouplers to isolate the low voltage side from the mains load. Each channel is active low, meaning the relay switches from NC to NO when the input (IN1 or IN2) is low.

This configuration can be used to control 230V/AC mains load using input signals from any microcontroller at IN1 and IN2.

R-VCC is usually 5V depending upon the relay that we use and the VCC is either 3.3V or 5V depending upon the output voltage of the microcontroller at IN1 or IN2.

SCHEMATIC –



PCB DESIGN –