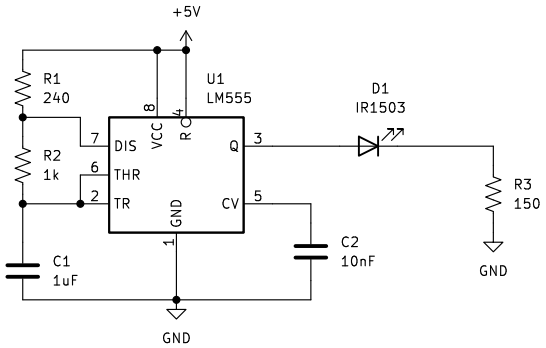
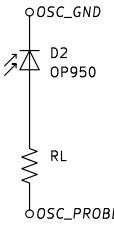


555 Timer Calculations using:
https://ohmslawcalculator.com/555-astable-calculator

The output should oscillate at 642 Hz with 55.3% duty cycle

The forward voltage of IR1503 is 1.2 V (at 20 mA). Assuming a supply voltage of 5V, the voltage drop over the battery is 5 − 1.2 = 3.8 V. Then the required resistor for 30 mA is R = 3.8 V / 30 mA = 126.67 Ohm. Rounding to the nearest common value we get R = 150 Ohm.

555 Timer (IR LED Driver)



When light shines on the OP950, it generates a current. This current, combined with RL creates a measureable voltage drop. In the next part, we replace this with a transimpedance amplifier.

Switching Test Time

E80 Team 36		
Sheet: / File: 555.kicad_sch		
Title: 555 Timer & IR LED Driver / Sensor		
Size: A4	Date: 2024-02-05	**Rev: 2**
KiCad E.D.A. kicad 7.0.10		Id: 1/1