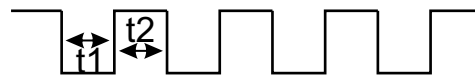
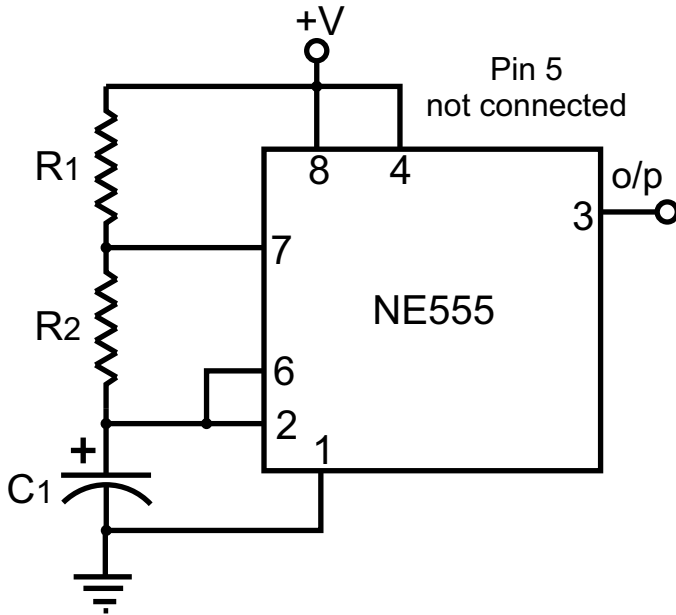
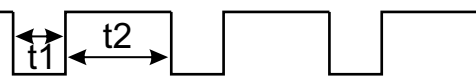


555 Astable timer quick reference sheet

By connecting pin 2 & 6 to the capacitor, pin 2 gets automatically triggered and the timer chip now produces a pulse train instead of a single pulse. C1 charges up through R1 and R2, but discharges only through R2 to ground via pin 7. You can thus change the high time and low times of the pulse train by changing the ratio of these two resistors. However, you *must* have a resistor between pin 7 and +.



When R1 is very small compared to R2, the output wave becomes more uniform. t1 and t2 become more equal.



When R1 is larger compared to R2, the output wave becomes less uniform. The larger R1 is compared to R2, the longer t2 will become relative to t1.

To calculate frequency: $f = \frac{1.44}{(R_1 + 2R_2) C_1}$

R1 and R2 are in ohms, C1 is in **Farads**.
Frequency is in Hertz (cycles per second).

Remember that during the cycle, C1 charges through both R1 and R2, but discharges only through R2. This is why the frequency is calculated with 2R2, because the capacitor current must go through that resistor *twice* per cycle.

