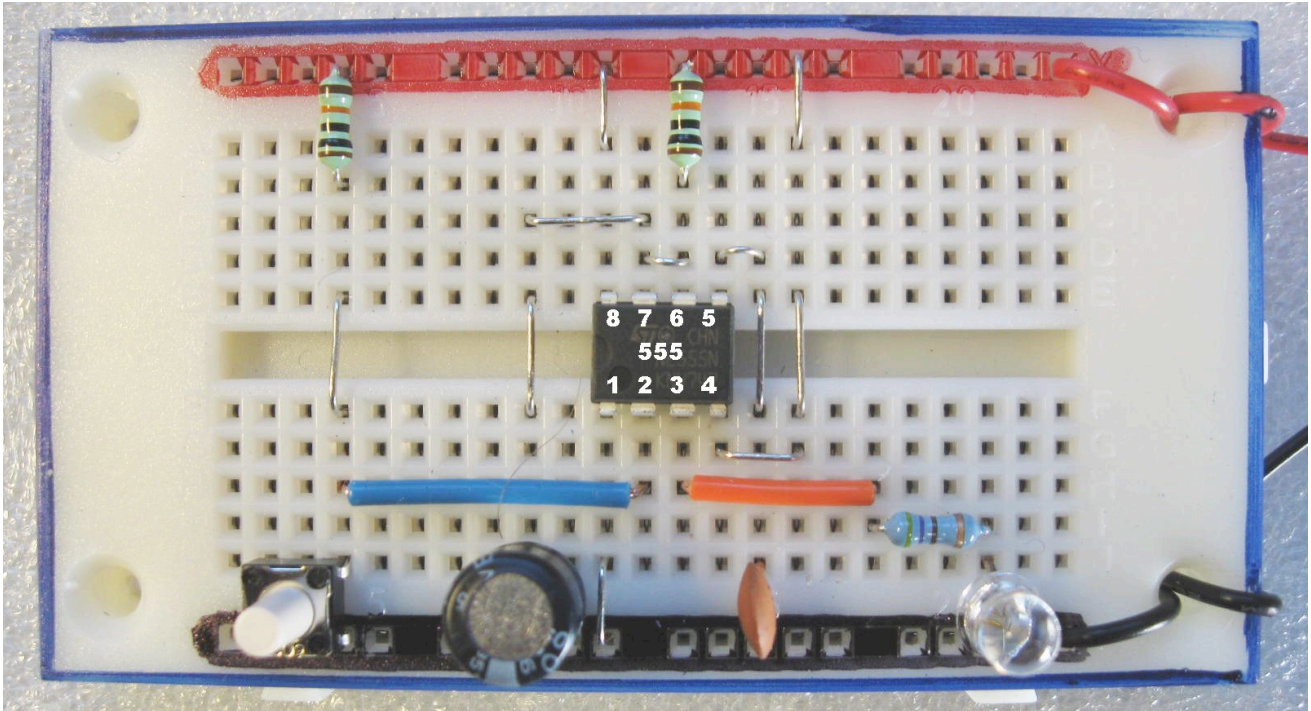
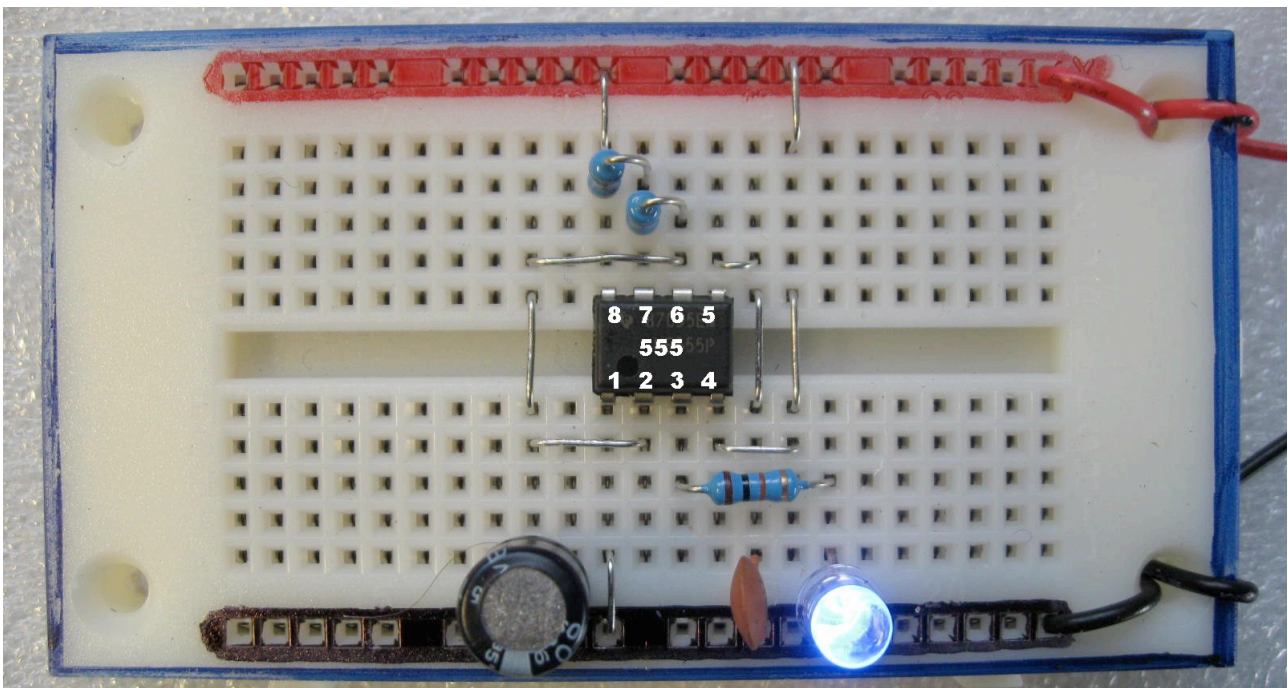


555 Monostable Mode



- When pin 2 goes LOW ($<1/3 V_{cc}$) the OP pin 3 goes HIGH until pin 6 exceeds $2/3 V_{cc}$
- When pin 6 exceeds $2/3 V_{cc}$ the OP pin 3 goes LOW and C is discharged by pin 7
- The pulse duration t is given by $t = R \times C \times 1.1$
- Pin 4 reset pin enables the 555 and must be held high. Pin 2 is normally HIGH
- Pin 5 is the reference pin and usually has a small decoupling capacitor on it of any value $\sim 0.1\mu F$ that does not affect the timing of the circuit

555 Astable Mode



- Whenever pin 2 goes LOW ($< 1/3 V_{cc}$) the OP pin 3 goes HIGH, pin 7 goes open circuit
- Capacitor C1 now starts to charge up from V_{cc} via both series resistors R1 and R2
- When pin 6 exceeds $2/3 V_{cc}$ the OP pin 3 then goes LOW and pin 7 goes LOW
- C1 now starts to discharge via R2 ONLY to pin 7. When $\text{pin}2 < 1/3 V_{cc}$ the cycle repeats
- The cycle repeats and the frequency is determined by $f = 1 / (0.693 * C * (R1 + 2 * R2))$
- Ratio of R2 to R1+R2 sets the ON:OFF duty cycle. OP is from pin 3