Diode Circuits
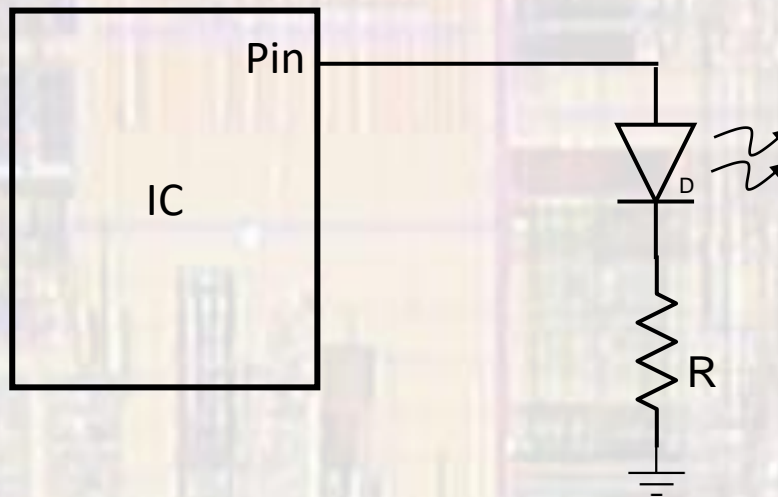
Last updated 1/10/24
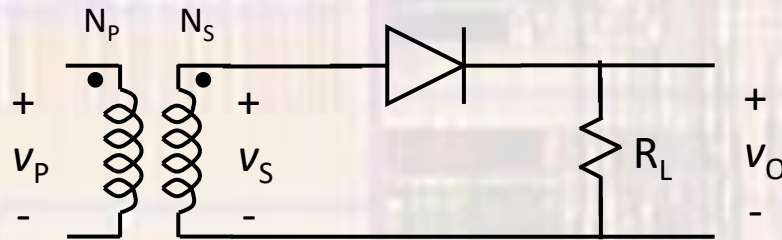
LED Driver

- Determine the resistor value that will maximize the LED brightness
  - $V_D = 1.1V$
  - Vpin = 0V – 3.3V
  - $Ipin_{max}$ = +/- 10mA
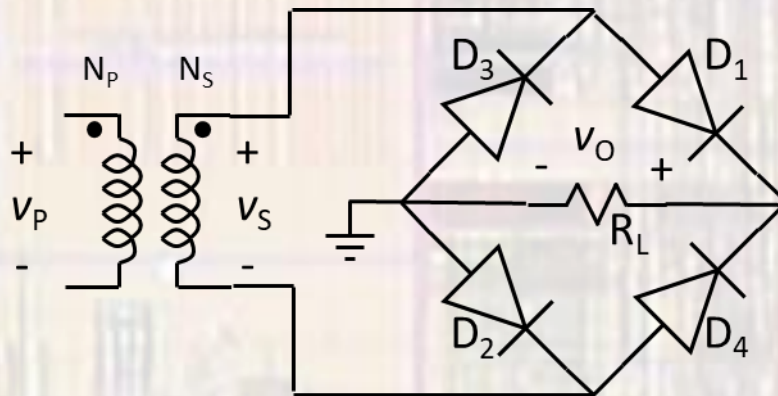
Half-wave Rectifier

- Sketch the output waveform v_O over 2 full input cycles
  - v_P = 120Vrms
  - N_P = 10 x N_S
  - v_D = 0.7V
  - R_L = 1KΩ

Bridge Rectifier

- Sketch the output waveform v_O over 2 full input cycles
  - v_P = 120Vrms
  - $N_P = 10 \times N_S$
  - v_D = 0.7V
  - R_L = 1KΩ

Diode Circuit

- Plot the voltage at node 1 vs Vbatt from 0 to 12V
  - Assume $V_D = 0.7V$