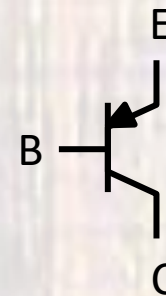
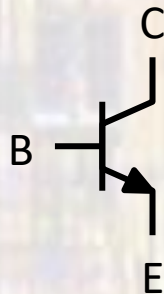
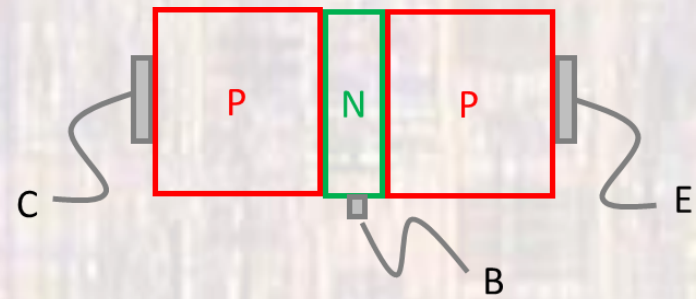
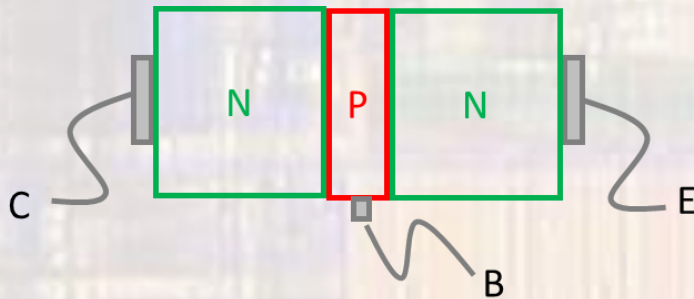


BJT Saturation

Last updated 2/21/22

BJT Saturation

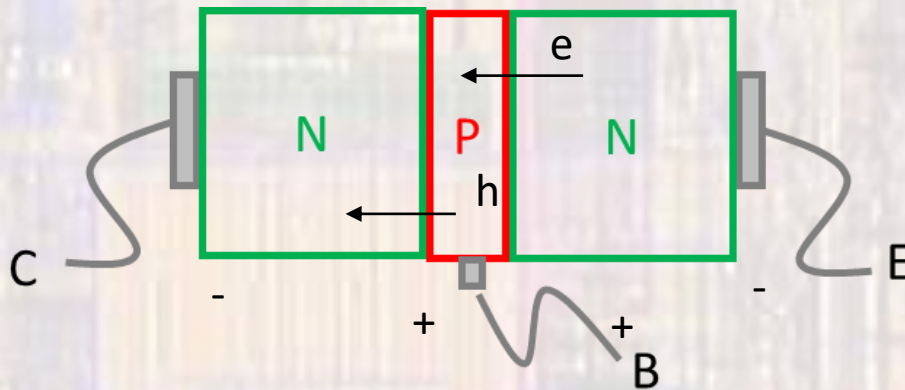
- Review



arrow points in direction
of the P-N junction
of the B/E diode

BJT Saturation

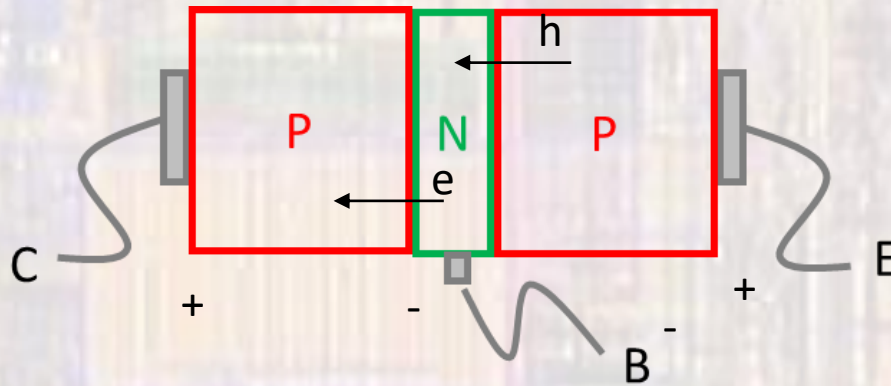
- Saturation - NPN
 - B-E junction forward biased, C-B junction forward biased



- Due to the relative doping concentrations $D_E > D_B > D_C$, Both diodes forward biased leads to
 - Electron diffusion dominant in the B-E junction
 - Hole diffusion dominant in the B-C junction
 - but smaller than B-E electron diffusion
 - Net C-E current, linearly dependent on the C-E voltage

BJT Saturation

- Saturation - PNP
 - B-E junction forward biased, C-B junction forward biased



- Due to the relative doping concentrations $D_E > D_B > D_C$, Both diodes forward biased leads to
 - Hole diffusion dominant in the E-B junction
 - Electron diffusion dominant in the C-B junction
 - but smaller than E-B electron diffusion
 - Net E-C current, linearly dependent on the C-E voltage