

# Transistor types

- Several different families of transistor types. Main ones:
  - BJT (bipolar junction transistors)
  - FET (field effect transistors)
- Will not go into too much detail on these types but will give an overview of MOSFETs (metal oxide semiconductor FETs)
  - MOSFETs are the most common type of transistor, accounting for over 99% of all transistors that are currently used

# N-type and P-type semiconductors

- Semiconductors: typically elements that form covalent bonds with each other, like Silicon (Si) or Germanium (Ge) - 4 electrons in outer valence shell
- N-type semiconductor: doped with an element that "donates" electrons (has "extra" electrons), so it is "negative" (hence, n-type)
  - Element characteristic: has 5 electrons in outer valence shell, e.g. Phosphorus (P) or Antimony (Sb)
- P-type semiconductor: doped with an element that "accepts" electrons ("wants" electrons), so it is "positive" (hence, p-type)
  - Element characteristic: has 3 electrons in outer valence shell, e.g. Aluminum (Al) or Indium (In)