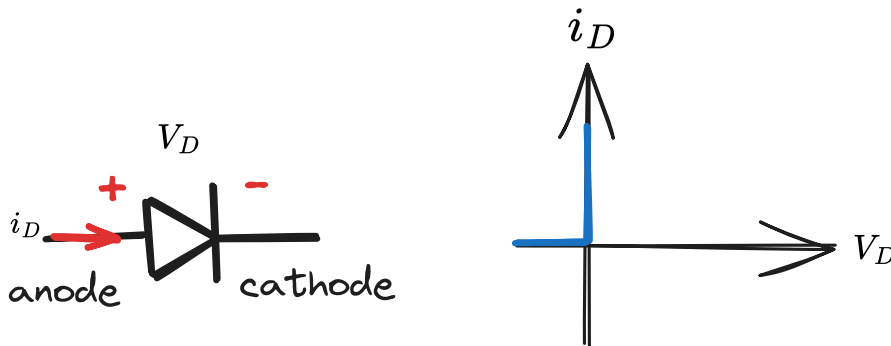


Basics of a diode

Diode symbol & ideal $i-v$ characteristic :



If $V_D < 0$ then, $i_D = 0$

If $i_D > 0$ then, $V_D = 0$

If the cathode end has a positive voltage compared to the anode end, the diode **behaves as an open circuit**. This is reverse bias.

If the cathode end has a negative voltage compared to the anode end, the diode **behaves as a short circuit**. This is forward bias.

Easy way to think of it: current CANNOT flow through the | (cathode) end of the diode.

Simple diode circuits

When doing circuit analysis with diode(s), you want to determine whether to model each diode as OC or SC. Generally you can do the following steps:

1. Use visual intuition (guessing current directions and/or voltages) to guess whether each diode will behave as an open circuit or closed circuit
2. Use circuit analysis tools to see if your guesses are valid
 1. If you guessed an SC: does the current flow the right way?
 2. If you guessed an OC: does the correct. side of the OC have greater voltage?
3. If needed, redo your guesses and try again
4. Finally, perform circuit analysis with the diodes modelled as OCs or SCs