

## I-V-Characteristics of Junctions with Diffusion and Generation Currents

- ▶ I-V-characteristics of **pn**-junctions should be basic knowledge. However, it is not a particularly easy subject.
  - The "ideal junction", without consideration of what happens in the space charge region, is not too difficult. Including diffusion and generation currents from the **SCR**, however, makes things quite messy. A proper treatment besides involving some knowledge of "Shockley-Read-Hall recombination theory" still must cut a lot of corners by using all kinds of approximations.
- ▶ If you are not too familiar with these topics, you may want to read up about it in the Hyperscript "Semiconductors". Here are the links:
  - [Simple treatment of pn-junction](#) (including **SCR** part)
  - [More involved treatment of simple pn-junction](#)
  - [Shockley-Read-Hall recombination](#)
- ▶ More links will be found in these modules.