

Basic Module “Transistors”

Course Goal

You will learn to understand the design of transistors and how they function.

Course Contents

Bipolar transistors

- > Design of bipolar transistors
- > Functioning of PNP transistors
- > Functioning of NPN transistors
- > Controlling the transistor
- > Applications

Characteristic values and characteristic curves

- > Voltages and currents in the transistor
- > Families of characteristics and characteristic values (grounded emitter circuit)
- > Residual currents, block voltages and breakdown voltages
- > Saturation state and saturation voltages
- > Transistor power loss
- > Switching times

Operating point

- > Selecting the transistor operating point
- > Temperature influence and operating point stabilisation
- > Cooling

Unipolar transistors

- > Junction gate field effect transistors (JFET)
- > MOS field effect transistors (IG-FET)
- > Dual gate MOS-FET
- > Unijunction transistors (UJT)

Hands-on exercises

- > Various measurement exercises on the theoretical aspects of the course
- > Computer-supported documentation of the various measurement exercises (lab reports)

Target Group / Prior Knowledge

People who have attended the modules Basics of Electrical Engineering (Direct Current and Alternating Current) and Semiconductors or have comparable prior knowledge.

Course Length

60 instructional units

Course Price

Available on request

Course Location:

Kapsch Partner Solutions GmbH, Johann-Hoffmann-Platz 9, 1120 Vienna or
at customer site, by agreement

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