

## COMPONENT LIST

(Bring spare components with you, especially for **the transistors and capacitors**)

### Experiment 1: Diode Characteristics and Soldering Technique

**Diode:** 2x1N4001, 2x1N4148, 2xAA119, 2xLED and 2x5.6V zener diode

**Resistor:** 1x1k $\Omega$

**Other:** 2x20W solder machine, solder wire, pertinax, multimeter, breadboard, 10xcrocodile wires, wires, 2x6V transformer (max. 10W).  
(Do not forget to get the power cable for the transformer.)

### Experiment 2: Clipper and Rectifier Circuits

**Diode:** 3x1N4001, 6x1N4001

**Resistor:** 2x 1k $\Omega$ , 1x22k $\Omega$ , 1x100k $\Omega$

**Capacitor :** 4x1 $\mu$ f, 2x100 $\mu$ f

**Other:** Breadboard, 10xcrocodile wires, wires, 2x6V transformer

### Experiment 3: Bipolar Junction Transistor Characteristics

**Transistor:** 2xBC237

**Resistor:** 1x1k $\Omega$ , 1x120k $\Omega$

**Diode :** 2x1N4001

**Other:** Breadboard, 10xcrocodile wires, wires

### Experiment 4: Application of transistor as a time, heat or light switch

**Resistor:** 1x330 $\Omega$ , 1x1k $\Omega$ , 1x100k $\Omega$ , 1x100k $\Omega$  POT

**Capacitor:** 2x220 $\mu$ f

**Transistor:** 2xBC237

**Other:** 2xLED, 2xLDR (1k $\Omega$  ~10k $\Omega$ ), 2xNTC (1k $\Omega$  ~10k $\Omega$ ) or PTC, breadboard, 10xcrocodile wires, wires

### Experiment 5: Voltage Regulators

**Resistor:** 1x560 $\Omega$ , 10k POT

**Diode:** 6x1N4001, 2x9.1V zener

**Capacitor:** 2x470 $\mu$ F 25V, 2x100 $\mu$ F 35V, 2x1000 $\mu$ F 35V

**Transistor:** 2xBC 140

**Other:** Breadboard, 10xcrocodile wires, wires, 2x6V transformer

### **Experiment 6: Frequency Analysis of Bipolar Transistor Amplifiers**

**Transistor:** 2x BC237

**Capacitor:** 4x10 $\mu$ f, 2x470 $\mu$ f, 2x1nF

**Resistor:** 1x82k $\Omega$ , 1x8.2k $\Omega$ , 1x1k $\Omega$ , 1x3.3k $\Omega$ , 1x12k $\Omega$

**Other:** Breadboard, 10xcrocodile wires, wires

### **Experiment 7: MOSFET Characteristics**

**MOSFET:** 2xBS170 N-channel (enhancement mode) or similar

**Diode :** 2x1N4001

**Resistor :** 1x1k $\Omega$

**Other:** Breadboard, 10xcrocodile wires, wires

### **Experiment 8: Frequency Analysis of MOS Transistor Amplifiers**

**MOSFET:** 2xBS170 or similar

**Capacitor:** 6x1 $\mu$ F, 6x100 $\mu$ f

**Resistor:** 1x220 $\Omega$ , 1x1k $\Omega$ , 1x10k $\Omega$ , 1x360k $\Omega$ , 1x1M $\Omega$ , 1x10k $\Omega$  POT

**Other:** Breadboard, 10xcrocodile wires, wires

**IMPORTANT NOTE:** The power cable of the transformers should be soldered and the open parts should be insulated with insulating tape. The transformers must only be connected to the electricity under the supervision of the assistant.