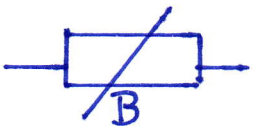
Zusammenfassung Kap. 3

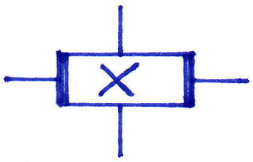
Homogene Halbleiterbauelemente:

- Feldplatte



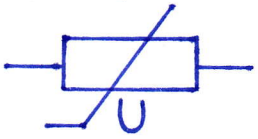
$R = f(B)$

- Hall-Sensor



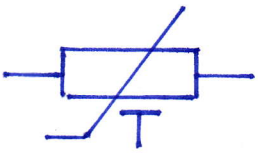
$U_H = f(B)$

- Varistor



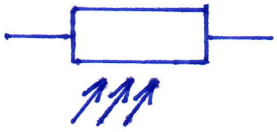
$R = f(U)$

- Heißleiter (NTC), Kaltleiter (PTC)



$R = f(T)$

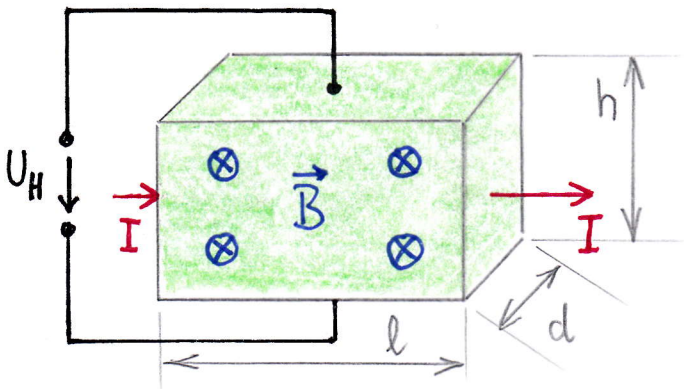
- Fotowiderstand



$R = f(E)$

E = Beleuchtungsstärke in Lux

Hall-Effekt:



- $U_H = \frac{B \cdot I}{d \cdot e \cdot p_0} = \frac{B \cdot I}{d} \cdot R_H$

mit $R_H = \frac{1}{e \cdot p_0}$ (p-HL)

- $U_H = -\frac{B \cdot I}{d \cdot e \cdot n_0} = -\frac{B \cdot I}{d} \cdot R_H$ mit $R_H = \frac{1}{e \cdot n_0}$ (n-HL)

- Ladungsträger-Driftgeschwindigkeit:

$v_{dn} = \frac{I}{n_0 \cdot e \cdot h \cdot d}$ (n-HL), $v_{dp} = \frac{I}{p_0 \cdot e \cdot h \cdot d}$ (p-HL)