Art of Electronics

Ohm's law

- $V = I * R$ (o Z)
- $R = V / I$
- $I = V / R$
- $P = I \text{ x } V$
- $P = I^2 * R$
- $P = V^2 / R$
- $R_{dyn} = {}_{delta}V/_{delta}I$

Kirchoff's law

- **Serie**: $I_{total} = I_1 = I_2$
- **Parallelo**: $I_{total} = I_1 + I_2$
- **Serie**: $V_{total} = V_1 + V_2$
- **Parallelo**: $V_{total} = V_1 = V_2$

Resistenze in parallelo

$R_{tot} = (R_1 * R_2) / (R_1 + R_2)$ $R_1 == R_2$: $R_{tot} = R_1 / 2$ $R_1 == 2R_2$: 2R/3 ## Voltage Divider

$V_{out} = V_{in} * R_2/(R_1 + R_2)$

Thevenin

$V_{thev} = V_{opencircuit}$ (no load) $= V_{in} * R_2/(R_1 + R_2)$ $R_{thev} = R_1 \,||\, R_2 = (R_1 * R_2) / (R_1 + R_2)$

to find impedence: apply delta V, find delta I