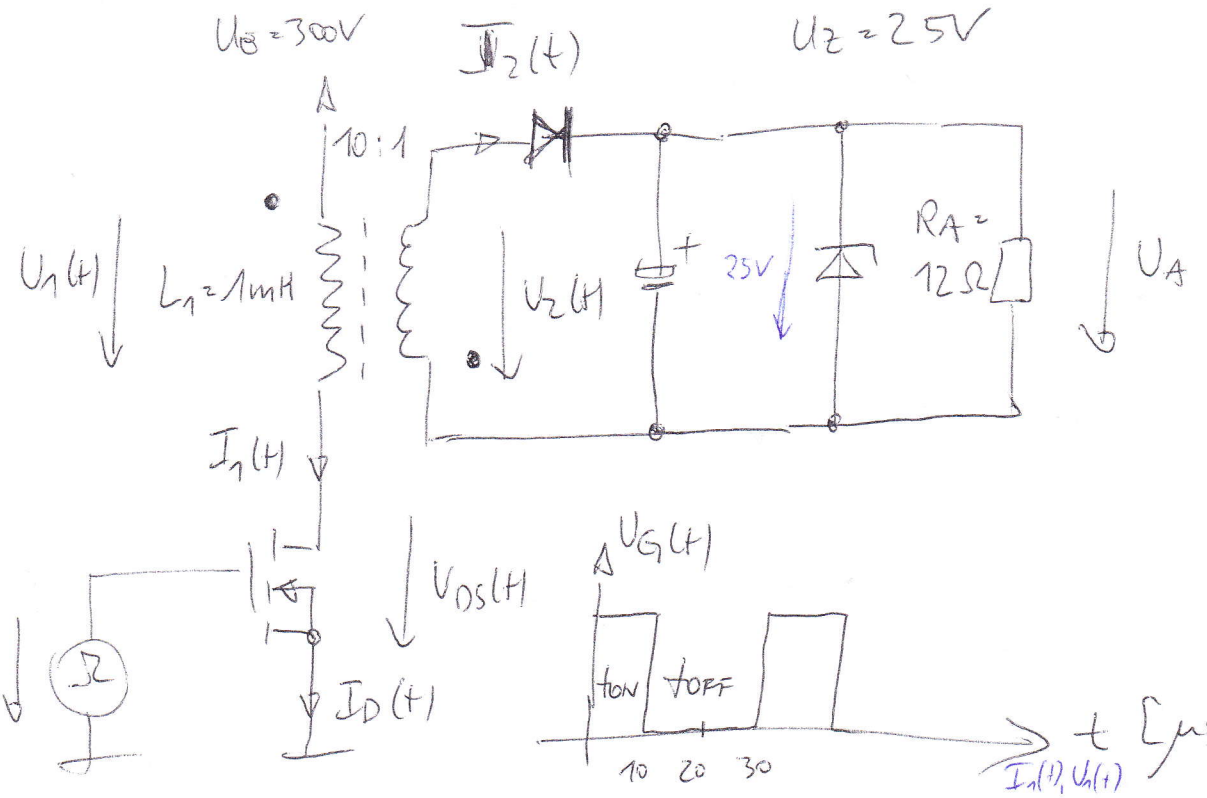
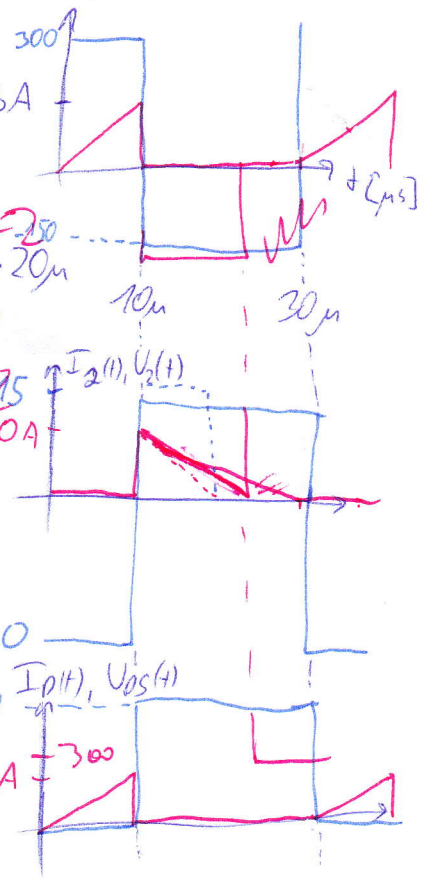
Uhl Clemens — MKE-WH — (N) — 4.10.2012

Geg.: Sperrwandler





ges.: P_E, P_A, P_{VZ}

$U_1(t), I_1(t)$; $U_{DS}(t), I_D(t)$; $I_2(t), U_2(t)$

$L \cdot \Delta I = U \cdot \Delta t$

$\Delta I = \frac{300 \cdot 10\mu s}{1mH} = 3A$

$300 \cdot 10\mu = U_x \cdot 20\mu$

$U_x = -150V$

$P_E = U_E \cdot I_E \Rightarrow P_E = \frac{U_E \cdot \Delta I}{4}$

$P_E = U_E \cdot \Delta I \cdot \frac{1}{2} \cdot \frac{1}{3} = 150W$ ✓

$P_A = U_A \cdot I_A = \frac{U_A^2}{R_A}$

~~$U_A = 25V \Rightarrow P_A$~~

$P_A = P_E = 150W$

~~$U_A = I_A \cdot R_A = 42,43V$~~

$I_A = \Delta I \cdot \frac{1}{2} \cdot \frac{2}{3} = 1A$

$P_A = U_A \cdot I_A \Rightarrow U_A = 15V$ } bei $P_{VZ} = 0$

~~+150~~

Anm.: $U_A = 25V \Rightarrow P_E = P_{VZ} + P_A$

$P_A = \frac{U_A^2}{R_A} = 52W$ ✓

$P_{VZ} = 98W$ ✓