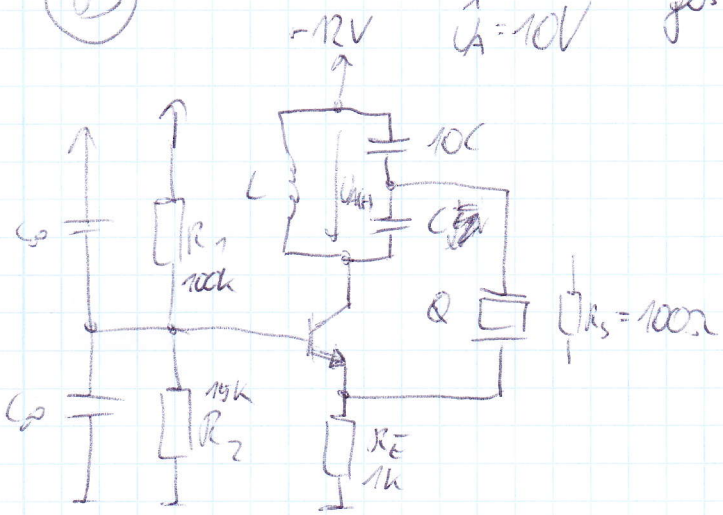
Wahl Chr. WH 19.10.12

(+)

OW-Oszillator

(B)



ges.: g = HF-ESB

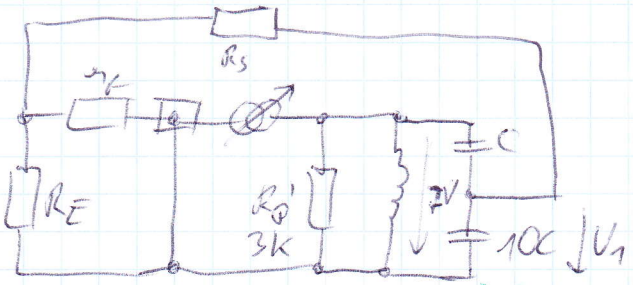
P_{VQ}

$U_B = 12 \cdot \frac{15}{115} = 1{,}57V$

$U_E \approx 1V$

$I_C = I_E = \frac{U_E}{R_E} = 1mA$

$r_f = \frac{U_T}{I_C} = 26\Omega$



$g = \frac{R_P' \| \ddot{u}^2 \cdot (R_S + r_f \| R_E)}{r_f} \cdot \frac{1}{\ddot{u}} = \frac{r_f \| R_E}{r_f \| R_E + R_S}$

$\ddot{u} = \frac{U_A}{U_E} = \frac{\frac{1}{j\omega 10C} + \frac{1}{j\omega C}}{\frac{1}{j\omega 10C}} = \frac{10}{10} + \frac{10}{1} = \cancel{\frac{11}{10}} \cancel{1{,}1} = 11$ $\cancel{g = 1{,}02}$

$g \approx \frac{R_P' \| \ddot{u}^2 \cdot (R_S + r_f)}{\ddot{u}(r_f + R_S)} = \cancel{1{,}05}\ 1{,}81$

$P_{Va} = \frac{U^2}{R_S} = \cancel{\frac{(1V)^2}{100\Omega}} = \cancel{0{,}01W}\ \cancel{0{,}1W}$

$U_{eff} = \frac{\hat{U}_A}{\sqrt{2}} = 7V \Rightarrow U_1 = 0{,}636V$

$U_Q = 0{,}64 \cdot \frac{R_S}{R_S + R_E \| r_f} = 0{,}505V$

$P_{Va} = \frac{U_Q^2}{100\Omega} = 2{,}55mW$