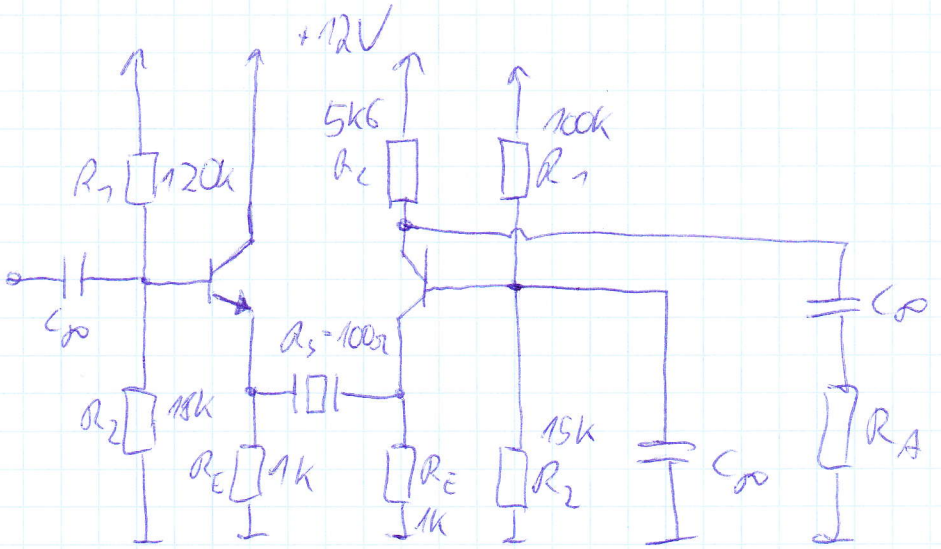
WH

Uhl 4AHELT + 22.11.12



ges: 1.) AP u. $v_u(f_u)$ $\quad v_u = \frac{R_C \| R_A}{R_S + r_{f1} + r_{f2}}$

2.) R_A für $v_u(f_u) = 20$

3.) P_Q bei f_u

$U_{B1} = 12 \cdot \frac{18}{120+18} = 1{,}57\,V$ ✓

$U_{E1} \approx 1V$

$I_{C1} = I_{E1} = \frac{1V}{1k} = 1mA \Rightarrow r_{f1} = 26\Omega$

$U_{B2} = 12 \cdot \frac{15}{115} = 1{,}57V \Rightarrow I_{C2} = 1mA \Rightarrow r_{f2} = 26\Omega$

$v_u = \frac{R_C \| R_A}{R_S + 2r_f} = \frac{5k6 \| R_A}{152} = 20$ ✓

$\frac{5k6 \cdot R_A}{5k6 + R_A} = 3040 \Rightarrow 3040 \cdot 5k6 + 3040 R_A = 5600 R_A$

$2560 R_A = 3040 \cdot 5600 \Rightarrow R_A = 6{,}65k \rightarrow 6k8$ ✓

~~U_{eff}~~ $= \hat{U}_e = \frac{2{,}5}{20} = 0{,}125V \Rightarrow U_{eff} = \frac{\hat{U}_e}{\sqrt{2}} = 0{,}088V$

$U_Q = 0{,}088V \cdot \frac{100}{100+52} = 57{,}89mV$

$P_Q = \frac{U_Q^2}{R_S} = 33{,}5\mu W$ ✓