

F2.4

JÄMFÖR MED UPPGIFT F2.3 \Rightarrow

$$F = \frac{-j\omega C_1 R_2}{(1 + j\omega C_2 R_2)(1 + j\omega C_1 R_1)}$$

$$|F| = \frac{\omega C_1 R_2}{\sqrt{1^2 + (\omega C_2 R_2)^2} \sqrt{1^2 + (\omega C_1 R_1)^2}}$$

$$\omega_u = 2\pi f_u = \frac{1}{C_1 R_1}$$

$$f_u = 100 \text{ Hz} ; R_1 = 1 \text{ k}\Omega \Rightarrow$$

$$2\pi \cdot 100 = \frac{1}{C_1 \cdot 1000} \Rightarrow \underline{C_1 \approx 1,6 \mu\text{F}}$$

$$\omega_o = 2\pi f_o = \frac{1}{C_2 R_2}$$

$$f_o = 15 \text{ kHz} ; R_2 = 3 \text{ k}\Omega \Rightarrow$$

$$2\pi \cdot 15000 = \frac{1}{C_2 \cdot 3000} \Rightarrow \underline{C_2 \approx 3,5 \text{ nF}}$$

$100 \text{ Hz} \ll f \ll 15 \text{ kHz}$ EX. VIS 5 kHz

$$\left(\omega = 2\pi \cdot 5000 = 10000 \frac{\text{RAD}}{\text{s}} \right) \Rightarrow$$

$$|F| \approx 3$$

