

$$A_{BP} = R_4/R_6 \rightarrow R_6 = R_4 \text{ para } A_{BP} = 1 \rightarrow R_6 = 47 \text{ k}\Omega \text{ (Valor comercial más cercano)}$$

$$A_{BP_{dB}} = 20 \log(R_4/R_6) = 20 \log(50/47) = 0,537 \text{ dB}$$

$$\omega_n^2 = \frac{\cancel{R_2}}{\cancel{R_1} \cancel{R_{f1}} \cancel{R_{f2}} C_1 C_2} \rightarrow \text{si } R_{f1} = R_{f2} \rightarrow \omega_n = \frac{1}{R_{f1} C_1} \rightarrow R_{f1} = \frac{1}{2\pi 6 \text{ kHz} \cdot 1 \text{ nF}} = 26,5 \text{ k}\Omega \rightarrow 27 \text{ k}\Omega$$

$$\rightarrow \omega_n = \frac{1}{27 \text{ k}\Omega \cdot 1 \text{ nF}} = 2\pi \cdot 5,89 \text{ kHz}$$

$$\text{De la transferencia, } \frac{\omega_n}{Q} = 0,378 \rightarrow Q = \frac{1}{0,378} = 2,646$$

$$Q = \frac{1 + R_4(R_6 + R_Q)/R_6 R_Q}{1 + \cancel{R_2}/\cancel{R_1}} \cdot \sqrt{\frac{\cancel{R_2} \cancel{R_{f1}} \cancel{C_1}}{\cancel{R_1} \cancel{R_{f2}} \cancel{C_2}}} \rightarrow 2 \cdot Q - 1 = R_4(R_6 + R_Q)/R_6 R_Q$$

$$R_Q \cdot \frac{R_6}{R_4} \cdot (2Q - 1) = R_6 + R_Q \rightarrow R_Q(4,034 - 1) = R_6 \rightarrow R_Q = 47 \text{ k}\Omega / 3,034 = 15,5 \text{ k}\Omega \rightarrow 15 \text{ k}\Omega$$

$$\rightarrow Q = 2,699$$