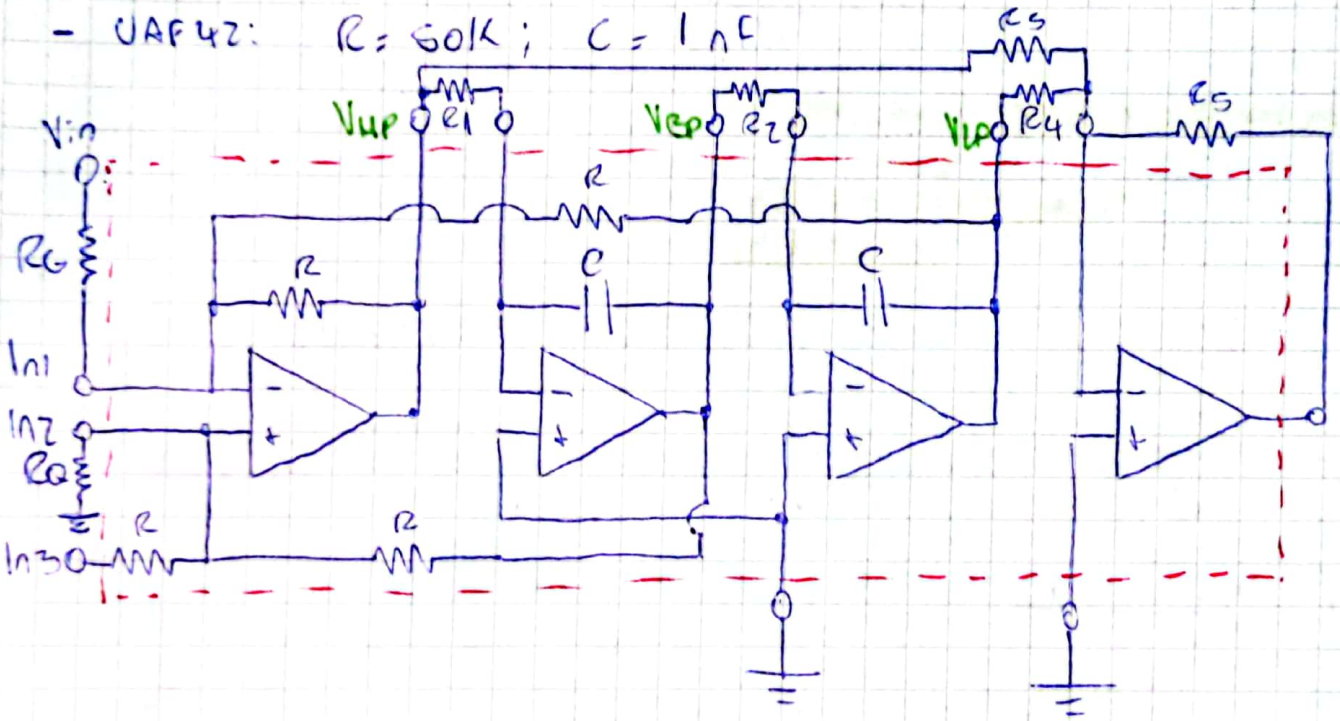
TPL 1:

Filtro Notch, $f_0 = 50\ Hz$, Ancho de banda = 3dB

- Suma de HP y LP Butter orden 2:

$$T_1(\$) = \frac{\$^2}{\$^2 + \sqrt{2}\,\$ + 1} \quad ; \quad T_2(\$) = \frac{1}{\$^2 + \sqrt{2}\,\$ + 1}$$

- UAF42: $R = 50k$; $C = 1nF$



- Ecuaciones de diseño para Inv. inversora:

$$\omega_n^2 = \frac{R}{R \cdot R_1 R_2 \cdot C^2} = \frac{1}{R_1 R_2 \cdot C^2}$$

$$\omega_n = 2\pi \cdot 50Hz = 100\pi\ r/s \Rightarrow \omega_n^2 = 98696,04 = \frac{1}{R_1 R_2 \cdot 1.10^{-18}}$$

$$9,869.10^{-14} = \frac{1}{R_1 R_2} \; ; \; R_1 = 2,2M\Omega \Rightarrow R_2 = 4,605M\Omega \simeq 4,7M\Omega$$

FECHA

$$Q = \left(1 + \frac{50k\Omega}{R_Q}\right) \cdot \frac{1}{\frac{1}{50k\Omega} + \frac{1}{50k\Omega} + \frac{1}{R_G}} \cdot \sqrt{\frac{R_1}{R^2 \cdot R_2}} \; ; \; R_G = 47k\Omega$$

$$Q = \left(1 + \frac{50k\Omega}{R_Q}\right) \cdot 0,2233$$

$$Q = \frac{1}{\sqrt{2}} \Rightarrow \frac{1}{\sqrt{2}} = \left(1 + \frac{50k\Omega}{R_Q}\right) \cdot 0,2233$$

$$3,166 = 1 + \frac{50k\Omega}{R_Q} \Rightarrow R_Q = 23077,39 \simeq 22k\Omega$$

- Sumador ganancia 1:

  $R_3 = R_4 = R_5 = 47k\Omega$

- Valores finales:

  $R_1 = 2,2M\Omega$ $\quad$ $R_G = 47k\Omega$

  $R_2 = 4,7M\Omega$ $\quad$ $R_Q = 22k\Omega$

  $R_3 = R_4 = R_5 = 47k\Omega$