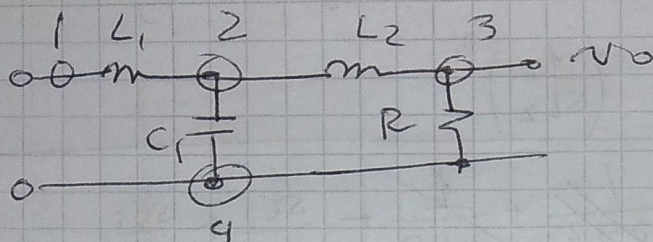


Resolución por MAF



$$MAJ = \begin{pmatrix} Y_{L1} & -Y_{L1} & 0 & 0 \\ -Y_{L1} & Y_{L1} + Y_{L2} + Y_{C1} & -Y_{L2} & -Y_{C1} \\ 0 & -Y_{L2} & Y_{L2} + G & -G \\ 0 & -Y_{C1} & -G & Y_{C1} + G \end{pmatrix}$$

$$Y_{L1} = \frac{1}{sL_1}$$

$$Y_{C1} = sC_1$$

$$\text{Venga } \sum C = 0$$

$$\sum f = 0$$

$$Y_{L2} = \frac{1}{sL_2}$$

$$G = \frac{1}{R}$$

De aquí:

$$T = \frac{V_{34}}{V_{14}} = (-1)^{3+4+1+4}$$

$$\frac{Y_{34}}{Y_{14}} = \frac{14}{14}$$

$$T = 1 \cdot \frac{\begin{pmatrix} -Y_{L1} & Y_{L1} + Y_{L2} + Y_{C1} \\ 0 & -Y_{L2} \end{pmatrix}}{\begin{pmatrix} Y_{L1} + Y_{L2} + Y_{C1} & -Y_{L2} \\ -Y_{L2} & Y_{L2} + G \end{pmatrix}}$$

$$T = \frac{\begin{pmatrix} -\frac{1}{sL_1} & \frac{1}{sL_1} + \frac{1}{sL_2} + sC_1 \\ 0 & -\frac{1}{sL_2} \end{pmatrix}}{\begin{pmatrix} \frac{1}{sL_1} + \frac{1}{sL_2} + sC_1 & -\frac{1}{sL_2} \\ -\frac{1}{sL_2} & \frac{1}{sL_2} + G \end{pmatrix}}$$

$$T(s) = \frac{\left(\frac{1}{sL_2}\right)^2}{\left(\frac{1}{sL_1} + \frac{1}{sL_2} + sC_1\right) \left(\frac{1}{sL_2} + \frac{1}{R}\right) - \left(\frac{1}{sL_2}\right)^2}$$

$$T(s) = \frac{\left(\frac{1}{sL_2}\right)^2}{\frac{1}{s^2 L_1 L_2} + \frac{1}{sL_1 R} + \cancel{\frac{1}{s^2 L_2^2}} + \cancel{\frac{1}{sL_2 R}} + \frac{sC_1}{sL_2} + \frac{sC_1}{R} - \cancel{\frac{1}{s^2 L_2^2}}}$$

$$T(s) = \frac{\left(\frac{1}{sL_2}\right)^2}{\frac{1}{s^2 L_1 L_2} + \frac{1}{sL_1 R} + \frac{1}{sL_2 R} + \frac{C_1}{L_2} + \frac{sC_1}{R}}$$

$$T(s) = \frac{1}{(sL_2)^2} \cdot \frac{1}{\frac{L_1 L_2 R^2 + sL_1 L_2^2 R + sL_1 L_2^2 R + s^2 C_1 L_2^2 R + s^2 L_1 L_2 R^2 C_1}{s^2 L_1 L_2^2 R^2}}$$

$$T(s) = \frac{1}{\frac{s^3 C_1 L_2^2 R L_1^2}{L_1^2 R^2} + \frac{s^2 L_1 L_2 R C_1}{L_1^2 R^2} + \frac{s L_1 L_2^2 R}{L_1^2 R^2} + \frac{s L_2 L_1 R}{L_1^2 R^2} + \frac{L_1 L_2 R}{L_1^2 R^2}}$$

$$\begin{cases} R=1 \\ L_2=0,5 \\ L_1=1,5 \\ C_1=\frac{4}{3} \end{cases}$$

$$T(s) =$$

(Reemplazando)

$$\frac{1}{\frac{s^3 C_1 L_2^2}{R} + s^2 L_2 C_1 + \frac{s L_2^2}{L_1 R L_2^2} + \frac{s L_2}{R L_2} + \frac{L_2}{L_1} \cdot \frac{1}{3}}$$

$$T(s) = \frac{1}{s^3 + s^2 \left(\frac{R}{L_2}\right)^2 + \frac{s \left(\frac{C_1}{R}\right)}{\frac{1}{2}} + \frac{s \left(\frac{1}{R L_2}\right)} + \frac{1}{3} \cdot \frac{1}{\left(\frac{1}{3}\right)}}$$

$$\overline{T}(s) = \frac{1}{s^3 + s^2 \cdot 2 + s\left(\frac{1}{2} + \frac{3}{2}\right) + \frac{1}{3} \cdot 3}$$

$$\boxed{\overline{T}(s) = \frac{1}{s^3 + 2s^2 + 2s + 1}}$$