



Red T

Carga

Red T:

$$Z = \begin{pmatrix} z_A + z_B & z_B \\ z_B & z_C + z_B \end{pmatrix}$$

Carga:

$$T_2 = \begin{pmatrix} 1 & 0 \\ Y_L & 1 \end{pmatrix}$$

$$Z \rightarrow T_1$$

$$A = \frac{z_{11}}{z_{21}} = \frac{z_A + z_B}{z_B}$$

$$C = \frac{1}{z_{21}} = \frac{1}{z_B}$$

$$B = \frac{z_{11} \cdot z_{22} - z_{12} \cdot z_{21}}{z_{21}} = \frac{(z_A + z_B)(z_C + z_B) - z_B^2}{z_B}$$

$$D = \frac{z_A z_C + z_A z_B + z_B^2 + z_B z_C - z_B^2}{z_B}$$

$$D = \frac{z_{22}}{z_{21}} = \frac{z_C + z_B}{z_B}$$

$$T_1 = \begin{pmatrix} \frac{z_A + z_B}{z_B} & \frac{z_A z_C + z_A z_B + z_B z_C}{z_B} \\ \frac{1}{z_B} & \frac{z_C + z_B}{z_B} \end{pmatrix}$$

$$T_T = T_1 \cdot T_2 = \begin{pmatrix} \frac{z_A + z_B}{z_B} & \frac{z_A z_C + z_A z_B + z_B z_C}{z_B} \\ \frac{1}{z_B} & \frac{z_C + z_B}{z_B} \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ Y_L & 1 \end{pmatrix}$$

$$\frac{V_i}{V_o} = A = \frac{z_A + z_B}{z_B} + \frac{z_A z_C + z_A z_B + z_B z_C}{z_B} \cdot Y_L$$

$$A = \frac{z_A + z_B + z_A z_C \cdot Y_L + z_A z_B \cdot Y_L + z_B z_C \cdot Y_L}{z_B}$$

$$A = \frac{sL_1 + \frac{1}{sC_2} + sL_1 \cdot sL_3 \cdot \frac{1}{R} + sL_1 \cdot \frac{1}{sC_2} \cdot \frac{1}{R} + \frac{1}{sC_2} \cdot sL_3 \cdot \frac{1}{R}}{\frac{1}{sC_2}}$$

$$\frac{V_o}{V_i} = \frac{R}{(s^2 L_1 C_2 + 1)R + s^3 L_1 C_2 L_3 + sL_1 + sL_3}$$

$$\frac{V_o}{V_i} = \frac{\frac{R}{L_1 C_2 L_3}}{s^3 + s^2 \frac{R}{L_3} + s \frac{(L_1 + L_3)}{L_1 C_2 L_3} + \frac{R}{L_1 C_2 L_3}}$$