Objectives

• How are parallel circuits displayed in the SC?

• How are series circuits displayed in the SC?

• How is the input of a BJT matched to the characteristic line impedance?
Parallel Connection of R and L Elements (Smith Chart)

- Shunt connection of R and L elements

\[ y_{in}(\omega_L) = g - j \frac{1}{\omega_L L Y_0} \]
• Shunt connection of R and C elements

\[ y_{in}(\omega_L) = g + jZ_0\omega_L C \]
• Series connection of R and L elements

\[ z_{in}(\omega_L) = r + j\frac{\omega_L L}{Z_0} \]
• **Series connection of R and C elements**

$$z_{in}(\omega_L) = r - j\frac{1}{\omega_L CZ_0}$$
Practical case: BJT connected via a T-network