

### Special Problem 5.4-1

A **matching network** has been constructed to match a **complex** load to a transmission line with characteristic impedance  $Z_0 = 50 \Omega$ .

The **design frequency** of this matching network is  $f_0 = 10 \text{ MHz}$ .

Note that this matching network is **not** specifically one of the standard designs that we studied.

The **capacitor** has a capacitance of value:

$$C = \frac{10^{-9}}{2\pi} \text{ farads}$$

Determine the **complex admittance**  $Y_L$  of the load.

