EE382 Transmission Line Circuit Elements
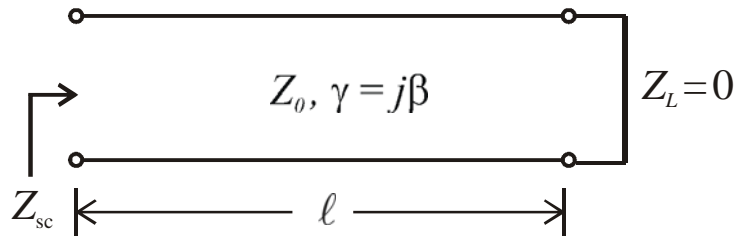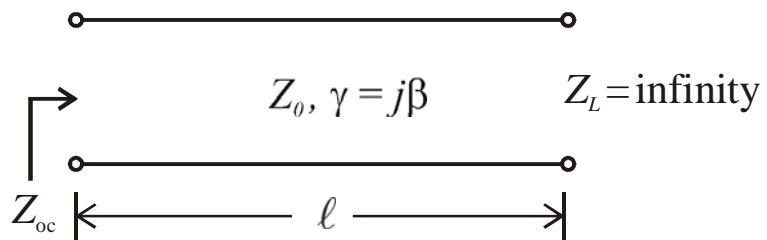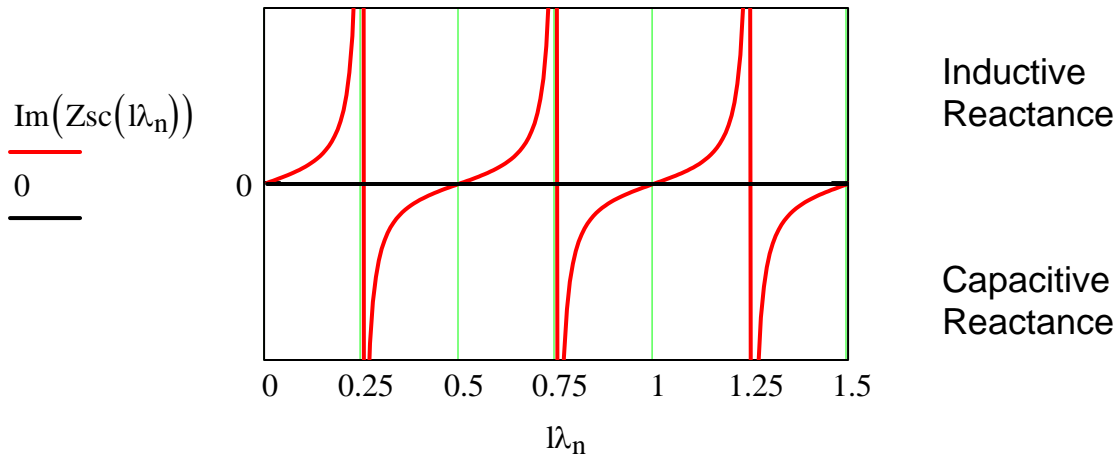
$Z0 := 50 \ \Omega \qquad Zsc(x) := j \cdot Z0 \cdot \tan(2 \cdot \pi \cdot x) \qquad Zoc(x) := \dfrac{Z0}{(j \cdot \tan(2 \cdot \pi \cdot x))}$

$n := 1 .. 200 \qquad \delta := 0.01 \qquad l\lambda_n := \dfrac{1.5 + \delta}{200} \cdot n$

$Z_0, \ \gamma = j\beta \qquad Z_L = 0$

$Z_{sc} \ |\!\!\longleftarrow \qquad \ell \qquad \longrightarrow\!\!|$

Short Circuit Stub

$\dfrac{\mathrm{Im}(Zsc(l\lambda_n))}{0}$

Inductive
Reactance

Capacitive
Reactance

$l\lambda_n$

$Z_0, \ \gamma = j\beta \qquad Z_L = \text{infinity}$

$Z_{oc} \ |\!\!\longleftarrow \qquad \ell \qquad \longrightarrow\!\!|$

Open Circuit Stub

$\dfrac{\mathrm{Im}(Zoc(l\lambda_n))}{0}$

Inductive
Reactance

Capacitive
Reactance

$l\lambda_n$