In[11]:= $R_l = 50\ \Omega\ ;\ Z_c = 10\ \Omega\ ;\ \omega = 2\ Pi\ 3\ GHz\ ;\ Cap = \frac{\left(\frac{2\ s}{50}\right)}{\omega}\ ;\ L = \frac{20\ \Omega}{\omega}\ ;\ R_s = 4\ \Omega\ /3;\ R_p = 500\ \Omega\ ;$

In[12]:= $\text{ParallelImpedance} = \text{UnitConvert}\left[1\ /\ \left(I\ \omega\ \text{Cap} + 1\ /R_l + 1\ /R_p\right),\ \text{"Ohms"}\right]$

Out[12]= $\left(\frac{5500}{521} - \frac{10\,000\ i}{521}\right)\ \Omega$

In[13]:= $\text{InputImpedance} = N[\ R_s + I\ \omega\ L + \text{ParallelImpedance}]$

Out[13]= $\left(11.89 + 0.806142\ i\right)\ \Omega$

In[14]:= $P_{load} = \frac{V_s^2}{2}\ \text{Re}\left[\frac{\text{ParallelImpedance}}{\text{InputImpedance}}\ \text{Conjugate}\left[\frac{\text{ParallelImpedance}}{\text{InputImpedance}}\ \frac{1}{R_l}\right]\right]$

Out[14]= $\left(0.033787/\Omega\right)\ V_s^2$

In[15]:= $P_{in} = \frac{V_s^2}{2}\ \text{Re}\left[1\ /\ \text{Conjugate}[\text{InputImpedance}]\right]$

Out[15]= $\left(0.0418599/\Omega\right)\ V_s^2$

In[16]:= $10\ \text{Log10}[(P_{load}\ /\ P_{in})]$

Out[16]= -0.930479

In[17]:= $\text{UnitConvert}[N[\text{Cap}],\ \text{"Farads"}]$

Out[17]= $2.12207 \times 10^{-12}\ F$

In[18]:= $\text{UnitConvert}[N[L],\ \text{"Henries"}]$

Out[18]= $1.06103 \times 10^{-9}\ H$