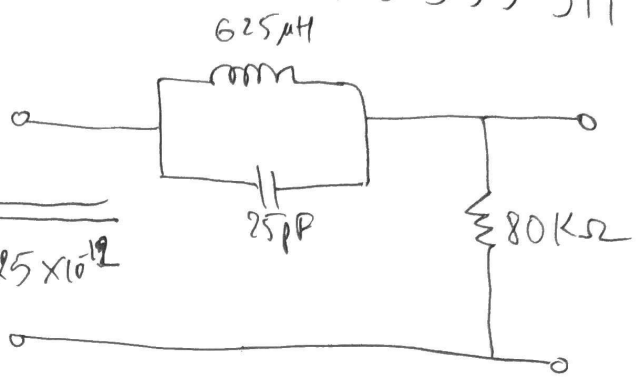
Nhat Ho
105 355 311

a) We have: $\begin{cases} H = 625 \times 10^{-6}\ H \\ C = 25 \times 10^{-12}\ F \end{cases}$



$$f_0 = \frac{1}{2\pi\sqrt{LC}} = \frac{1}{2\pi\sqrt{625\times10^{-6}\times25\times10^{-12}}}$$

$$\Rightarrow f_0 = \frac{1}{2\pi \times 1.25\times10^{-7}} = 12.73\times10^{5}\ (Hz) = 1.273\times10^{6}\ (Hz)$$

$$\Rightarrow \boxed{f_0 = 1.273\ (MHz)}$$

b) This filter is **Band Reject**

(For resonant: $jwL - j\frac{1}{wc} = 0 \Leftrightarrow wL - \frac{1}{wc} = 0$

$\Rightarrow w^2LC = 1 \Rightarrow w = \frac{1}{\sqrt{LC}} = 2\pi f \Rightarrow f = \frac{1}{2\pi\sqrt{LC}}$)