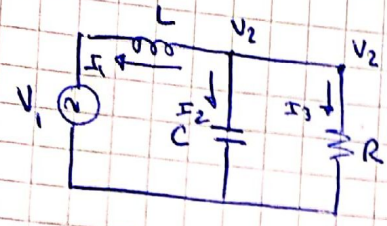


$I_1 + I_2 + I_3 = 0$

$$\frac{V_2 - V_1}{s.L} + \frac{V_2}{1/sC} + \frac{V_2}{R} = 0$$

$$\frac{V_2}{sL} - \frac{V_1}{sL} + s.C\,V_2 + \frac{V_2}{R} = 0$$

$$V_2 \cdot \left(\frac{1}{sL} + s.C + \frac{1}{R}\right) = \frac{V_1}{sL}$$

$$V_2 \cdot \left(\frac{s^2.CLR + sL + R}{RLs}\right) = \frac{V_1}{sL}$$

$$\frac{V_2}{V_1} = \frac{R}{s^2.CLR + sL + R} = \frac{R/CLR}{s^2 + s.\,1/CR + R/CLR} = \frac{1/CL}{s^2 + \frac{1}{CR}s + \frac{1}{CL}}$$

$$\frac{V_2}{V_1} = \frac{\omega_0^2}{s^2 + \frac{\omega_0}{q}s + \omega_0^2} \qquad \omega_0^2 = \frac{1}{CL}$$

$$\frac{\omega_0}{q} = \frac{1}{RC} \rightarrow q = R.C.\omega_0$$

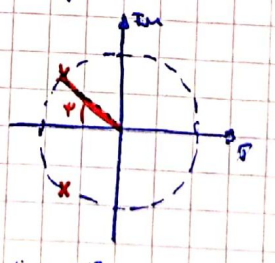
$$q = \sqrt{R^2C^2}.\frac{1}{\sqrt{CL}} = R.\sqrt{\frac{C}{L}}$$

$T(s) = \frac{1}{1 + \omega^{2n}}$ $\qquad 1/q = 2\omega\psi$

Butter

$$T(s) = \frac{1}{s^2 + 2\omega\psi.s + 1}$$

$$T(s) = \frac{1}{s^2 + \sqrt{2}.s + 1}$$



$s_1 = \frac{\pi}{4}$, $s_2 = \frac{3}{4}\pi$

$\omega_N = 1$ → [illegible]

$R' = 1$

$R_N = 1k$ $\qquad \Omega_N = 2\pi.1k$

$R = R_N \cdot R' = 1k \cdot 1$

$$L = \frac{L'.R_N}{\Omega_N} = \frac{1{,}42 \cdot 1k}{2\pi.1k} = 226\ mHy$$

$$C = \frac{C'}{R_N.\Omega_N} = \frac{0{,}707}{1k.2\pi.1k} = 112{,}5\ nF$$

$$\frac{1}{s} = \frac{1}{R.C} \Rightarrow \frac{1}{q} = \frac{1}{C}$$

$q = C' = 0{,}707$

$$q = 1\sqrt{\frac{C}{L}} = \frac{1}{\sqrt{2}}$$

$$\frac{C}{L} = \frac{1}{2} \rightarrow L = 2.C$$

$L' = 1{,}42$