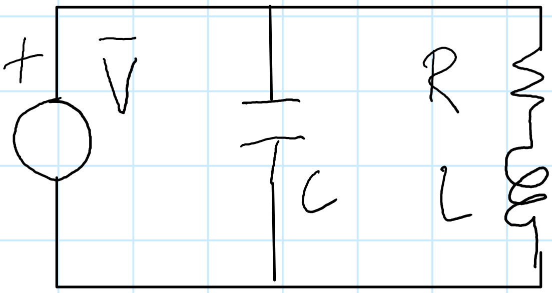


$\omega = 2k \frac{rad}{s}$

$R = 200\,\Omega \quad L = 50\,mH$

$Z_{RL} = 200 + j\,2k \cdot 50m = 200 + j100 \cong 223{,}61\,\Omega \angle 0{,}46\,rad$ (26,6°)

$I_{RL} = \frac{V}{Z_{LC}} = \frac{5 \angle \pi/4}{223{,}61 \angle 0{,}46} \cong 22{,}4\,mA \angle 0{,}33\,rad$ (18,9°) $= 21{,}2 + j\,7{,}26$

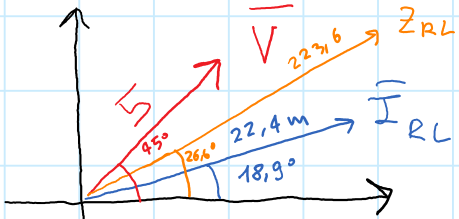
$C = \frac{L}{R^2 + (\omega L)^2} = \frac{50m}{200^2 + 100^2} = 1\,\mu F \qquad X_c = -j\frac{1}{\omega C} = -j500\,\Omega$

$Z_{TOT} = \frac{Z_{RL} \cdot X_c}{Z_{RL} + X_c} = \frac{223{,}61 \angle 0{,}46 \cdot 500 \angle -\pi/2}{200 + j100 - j500} = 250{,}01 \angle 0{,}00$

$200 - j400 = 447{,}2 \angle -1{,}11$

$t_\alpha = \frac{\alpha}{\omega} = \frac{\pi/4}{2k} = 393\,\mu s$

$T = \frac{2\pi}{\omega} = 3142\,\mu s$



$\cos\varphi = \cos 0° = 1$

$\operatorname{sen} 0° = 0$

$P_A = \frac{V}{\sqrt{2}} \frac{I}{\sqrt{2}} \cdot 1 = \frac{|V|^2/2}{|Z_{TOT}|} = \frac{25/2}{250} = 0{,}05\,W$

$Q = V I \cdot 0 = 0\,VAR$

$S = P_A\,VA$