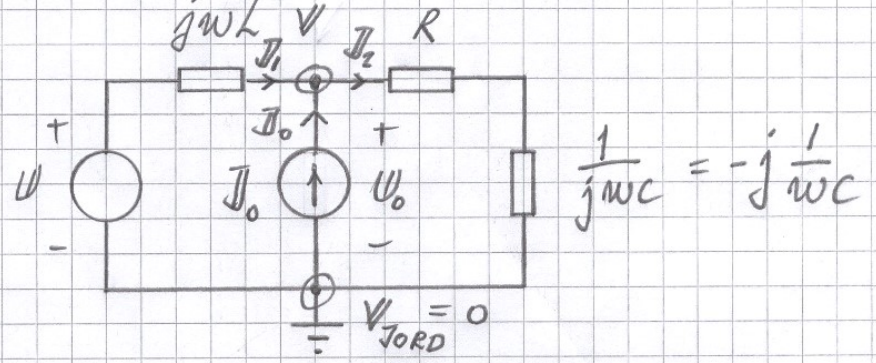
$$P_0 = U_0 J_0 \cos\varphi_0 \quad \ldots (1)$$

där $\varphi_0 = \arg U_0 - \arg J_0$



$$u(t) = 100\sqrt{2}\sin(10000t + 0^\circ)\ V \quad \rightsquigarrow$$

$$i_0(t) = 2{,}0\sqrt{2}\sin(10000t + 0^\circ)\ A$$

$$U = 100\sqrt{2}\,e^{j0^\circ}\ V \qquad J_0 = 2{,}0\sqrt{2}\,e^{j0^\circ}\ A$$

NODANALYS:

$$J_1 + J_0 - J_2 = 0 \quad \Rightarrow$$

$$\frac{U - V}{j\omega L} + J_0 - \frac{V - V_{JORD}}{R - j\frac{1}{\omega C}} = 0$$

$$\frac{100\sqrt{2} - V}{j200} + 2{,}0\sqrt{2} - \frac{V - 0}{100 - j100} = 0$$

$$-j0.5\sqrt{2} - \frac{\dot{V}}{j200} + 2{,}0\sqrt{2} - \frac{\dot{V}}{100 - j100} = 0$$

$$-\frac{(100 - j100)\dot{V} - j200\dot{V}}{j200(100 - j100)} = j0.5\sqrt{2} - 2{,}0\sqrt{2}$$

$$\frac{(-100 - j100)\dot{V}}{j20000 + 20000} = -2\sqrt{2} + j0.5\sqrt{2}$$

$$\frac{100\sqrt{2}\, e^{-j135^\circ}\ \dot{V}}{20000\sqrt{2}\, e^{j45^\circ}} = 2{,}92\, e^{j166^\circ}$$

$$\dot{V} = 584\, e^{j346^\circ}\ V$$

$$U_0 = V$$

$$U_0 = \frac{\hat{U}_0}{\sqrt{2}} \rightarrow U_0 = 413\ V$$

$$J_0 = \frac{\hat{J}_0}{\sqrt{2}} \rightarrow J_0 = 2{,}0\ A$$

$$\varphi_0 = 346^\circ - 0^\circ = 346^\circ$$

INS. (1) $\rightarrow P_0 = 413 \cdot 2{,}0 \cos(346^\circ) =$

$= 0{,}80\ kW$