

$$V_o = 10 \text{ V}, R = 10 \Omega, L = 10^{-2} \text{ H}$$

L and R in series

$$V = V_o \cos \omega t$$

f (Hz)	100	10^3	10^4
ω (rad/s)	628	6.3×10^3	6.3×10^4
ωL (Ω)	6.3	63	628
I_{max} (A)	0.85	0.16	0.016
ϕ	32°	81°	89°

$$I_{max} = \frac{V_o}{\sqrt{R^2 + (\omega L)^2}}$$

$$I = I_{max} \cos(\omega t - \phi) \quad \begin{array}{l} \omega t \text{ and } \phi \text{ both in radians} \\ \text{or both in degrees} \end{array}$$

$$\tan \phi = \frac{\omega L}{R}$$