

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

$L$  and  $R$  in series

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

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$f$ (Hz)	100	$10^3$	$10^4$
$\omega$ (rad/s)	628	$6.3 \times 10^3$	$6.3 \times 10^4$
$\omega L$ ( $\Omega$ )	6.3	63	628
$I_{max}$ (A)	0.85	0.16	0.016
$\phi$	$32^\circ$	$81^\circ$	$89^\circ$

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

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

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