

Chapter 11, Problem 47.

For each of the following cases, find the complex power, the average power, and the reactive power:

(a) $v(t) = 112 \cos(\omega t + 10^\circ) \text{ V}$, $i(t) = 4 \cos(\omega t - 50^\circ) \text{ A}$

(b) $v(t) = 160 \cos(377t) \text{ V}$, $i(t) = 4 \cos(377t + 45^\circ) \text{ A}$

(c) $\mathbf{V} = 80 \angle 60^\circ \text{ V rms}$, $\mathbf{Z} = 50 \angle 30^\circ \Omega$

(d) $\mathbf{I} = 10 \angle 60^\circ \text{ A rms}$, $\mathbf{Z} = 100 \angle 45^\circ \Omega$