Capacitive Complex Impedance (18:09)

Identify how voltage and current relate for resistive, capacitive, and inductive elements.

Identify features of resistive complex impedance and how to calculate resistive complex impedance.

Identify features of capacitive complex impedance and how to calculate capacitive complex impedance.

Identify features of inductive complex impedance and how to calculate inductive complex impedance.

Identify the units employed to measure complex impedance. Identify the means of distinguishing between resistive, capacitive, and inductive complex impedances.

Calculate the complex impedance of a 22µF capacitor at an excitation frequency of 60Hz. Express your answer in polar format.

Determine the impedance of the above capacitor if excitation frequency were increased to 120Hz.

Determine the impedance of the above capacitor if excitation frequency were decreased to 30Hz.

State the relationship capacitive complex impedance magnitude has with frequency. Draw a plot of capacitive complex impedance magnitude as a function of frequency.

Explain why a capacitor is modeled as an open circuit in steady state DC conditions.

Given the below information determine the desired properties: