Georgia Institute of Technology

Introduction to Electronics

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An introduction to electronic components and a study of circuits containing such devices.

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Review of Transfer Functions

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Review of transfer functions for characterizing circuits

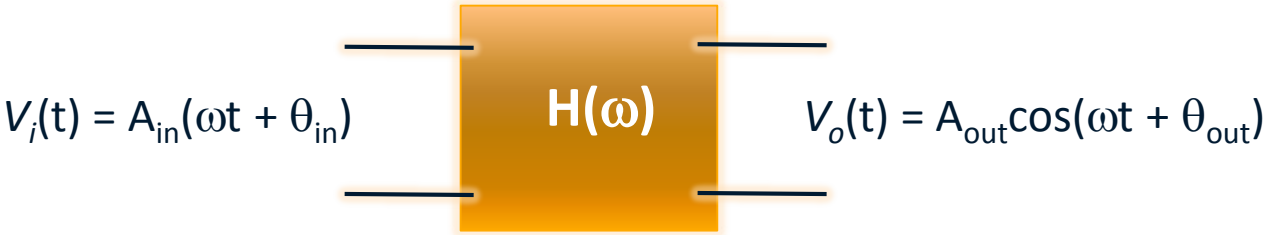
Previous Lesson

- Review of impedance

Lesson Objectives

- Review transfer functions
  - To characterize a circuit
  - To find frequency response curves

Transfer Function Two-Port Networks

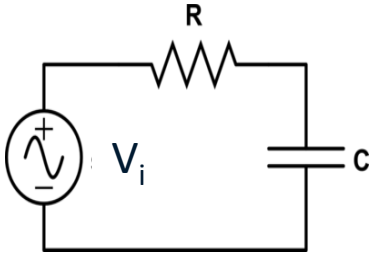
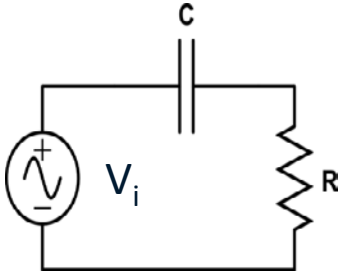
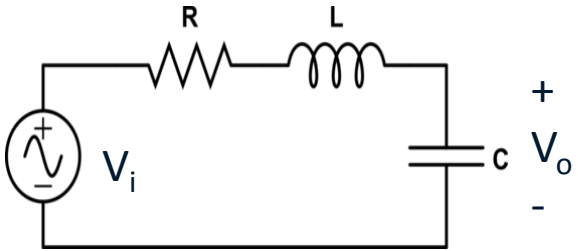


$$H(\omega)V_i = V_o$$

$$H(\omega)A_{in}\angle\theta_{in} = A_{out}\angle\theta_{out}$$

$$A_{out} = |H(\omega)|A_{in} \qquad \theta_{out} = \angle H(\omega) + \theta_{in}$$

Summary of Simple Circuits

	$$H(\omega)=\frac{1}{1+RC\omega j}$$
	$$H(\omega)=\frac{RC\omega j}{1+RC\omega j}$$
	$$H(\omega)=\frac{1}{1-\omega^2 LC+RC\omega j}$$

Summary

- Defined transfer function for Two-Port Networks
  - Showed transfer functions of simple circuits

Next Lesson

- Review of Frequency Responses