

Lecture 4

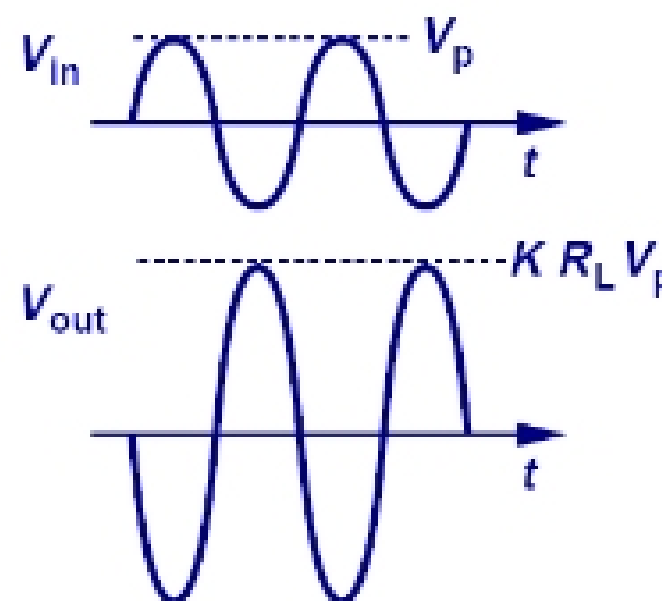
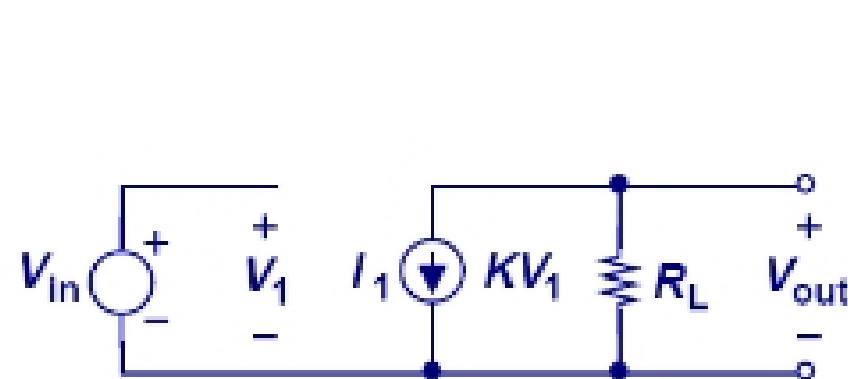
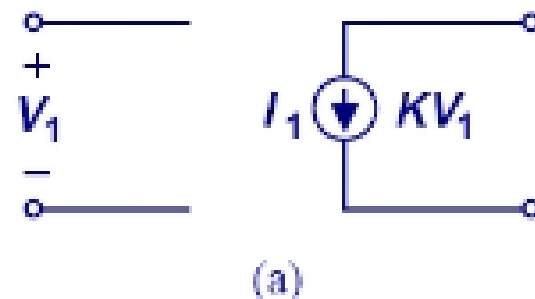
OUTLINE

- Bipolar Junction Transistor (BJT)
 - General considerations
 - Structure
 - Operation in active mode
 - Large-signal model and I - V characteristics

Reading: Chapter 4.1-4.4.2

Voltage-Dependent Current Source

- A voltage-dependent current source can act as an amplifier.
- If KR_L is greater than 1, then the signal is amplified.



$$A_V \equiv \frac{V_{out}}{V_{in}} = -KR_L$$

Voltage-Dependent Current Source with Input Resistance

- The magnitude of amplification is independent of the input resistance r_{in} .

