

KNOWLEDGE PROBE 2: METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTORS (MOSFETS) AND COMMON ELECTRONIC CIRCUITS

Review of MOSFETs

Learning Objectives

1. Explain MOSFET biasing.
 2. Describe advantages and disadvantages to using MOSFETs.
 3. Explain basic MOSFET linear circuits including current sources and differential amplifiers.
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1. Which of the following is the most widely used?
 - a. BJTs
 - b. Depletion mode MOSFETs
 - c. Enhancement mode MOSFETs
 - d. JFETs
 2. Which element of the MOSFET controls conduction?
 - a. Drain
 - b. Gate
 - c. Source
 - d. Any of the above
 3. A circuit using an N-channel enhancement mode MOSFET (E-MOSFET) should have the following voltage applied
 - a. Drain positive with respect to the source
 - b. Gate negative with respect to the source
 - c. Source positive with respect to the drain
 - d. Source positive with respect to the gate
 4. An N-channel E-MOSFET has a threshold voltage of 1.3 volts. A gate voltage of 2 volts is applied. The MOSFET will
 - a. Conduct
 - b. Not conduct
 - c. Not enough information given
 5. The path of electron flow in a conducting N-channel E-MOSFET is
 - a. Drain to source
 - b. Gate to drain
 - c. Source to drain
 - d. Source to gate



6. What region should the device be biased for linear amplification in a MOSFET?
 - a. Cut-off
 - b. Ohmic
 - c. Saturation
 - d. Any of the above

7. What is the shape of the drain current vs. gate voltage curve?
 - a. Inverse trigonometric
 - b. Linear
 - c. Logarithmic
 - d. Parabolic

8. The MOSFET makes a good switch.
 - a. True
 - b. False