



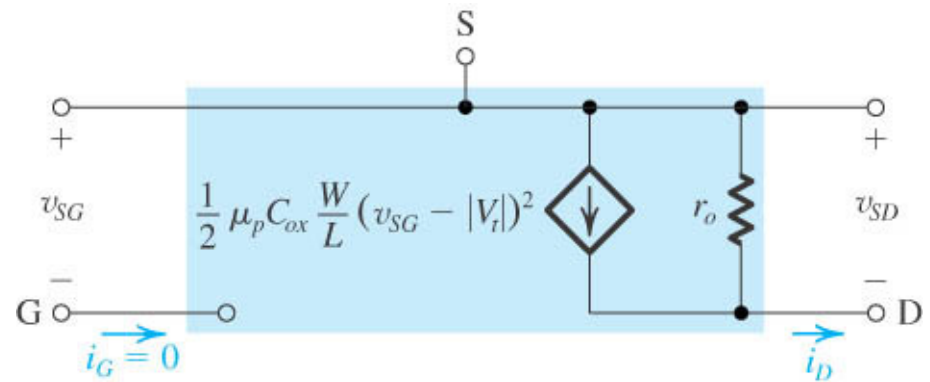
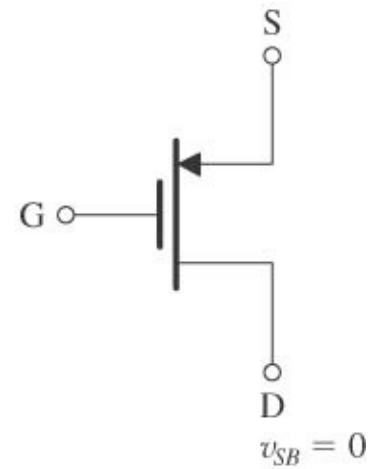
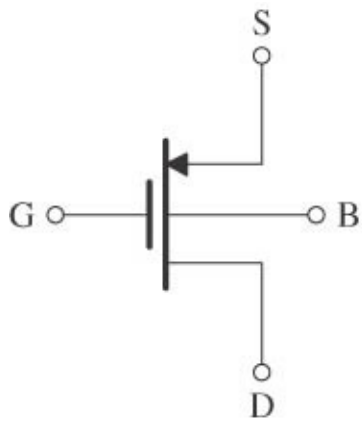
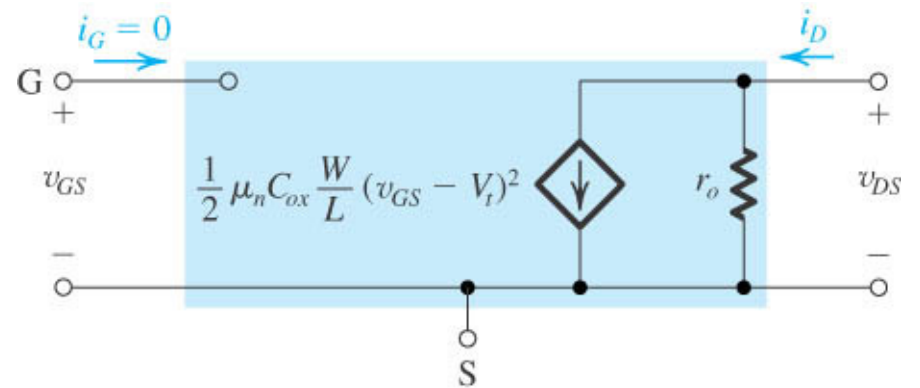
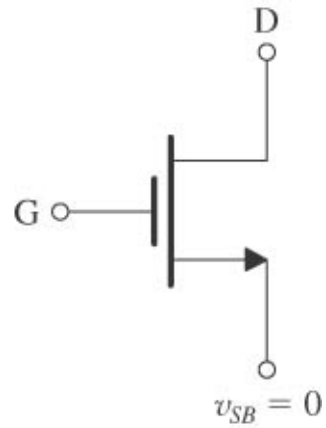
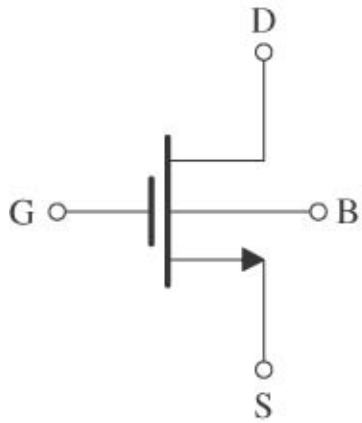
Faculty of Engineering

ECE 142: Electronic Circuits

Lecture 13:
MOSFET DC Circuits

- Based on content from Sedra/Smith “Microelectronic Circuits” - Fifth Edition

Summary



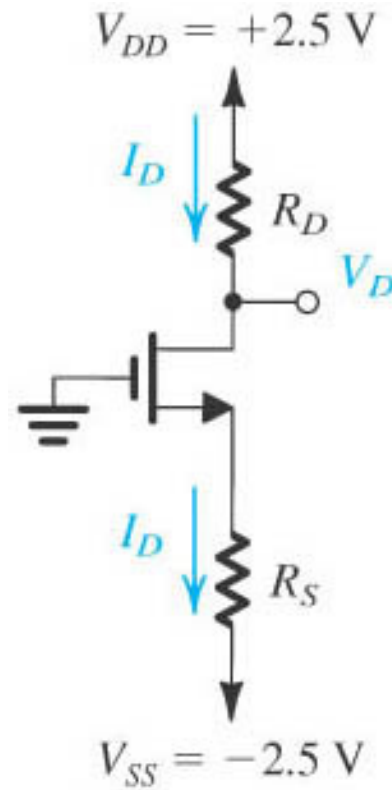
Example (1)

$$R_D = 2 \text{ k}\Omega$$

$$R_S = 1 \text{ k}\Omega$$

$$V_t = 1 \text{ V}$$

$$k_n = 1 \text{ mA/V}^2$$

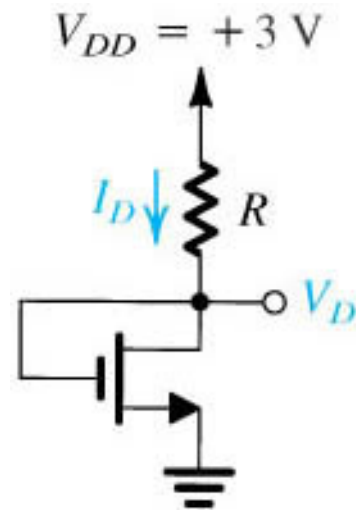


Example (2)

$$R = 2 \text{ k}\Omega$$

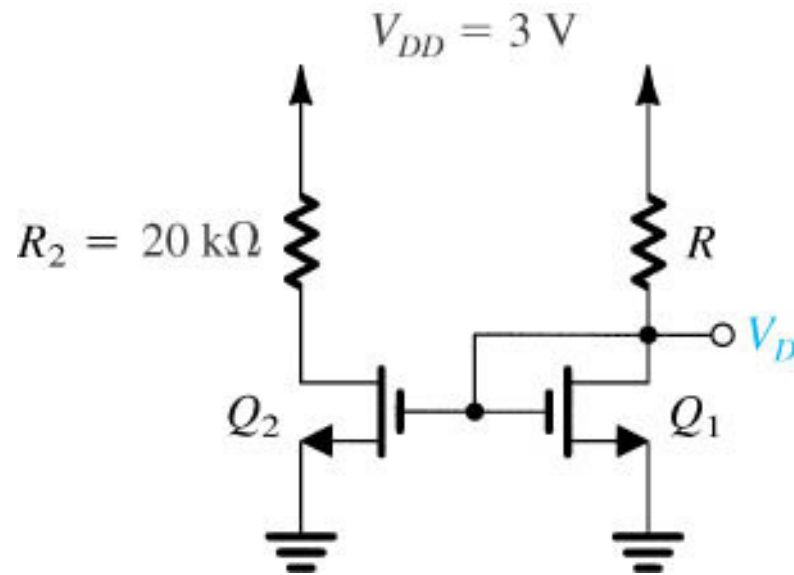
$$V_t = 1 \text{ V}$$

$$k_n = 1 \text{ mA/V}^2$$

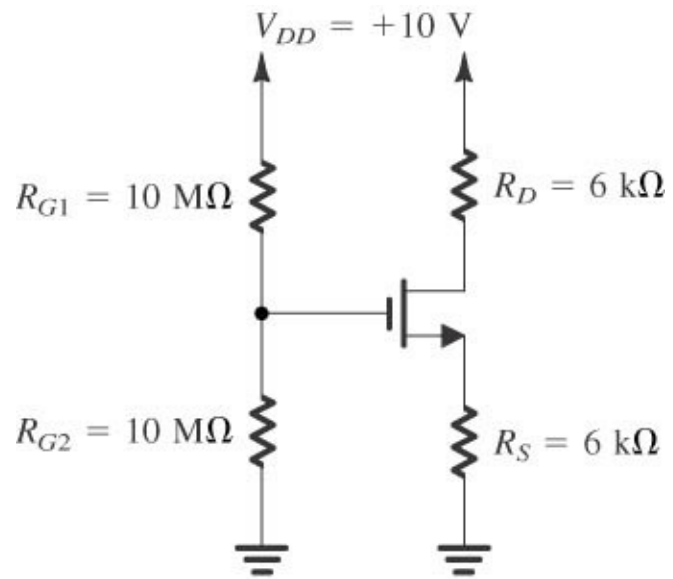


Example (3)

$$I_R / I_{R2} = ?$$

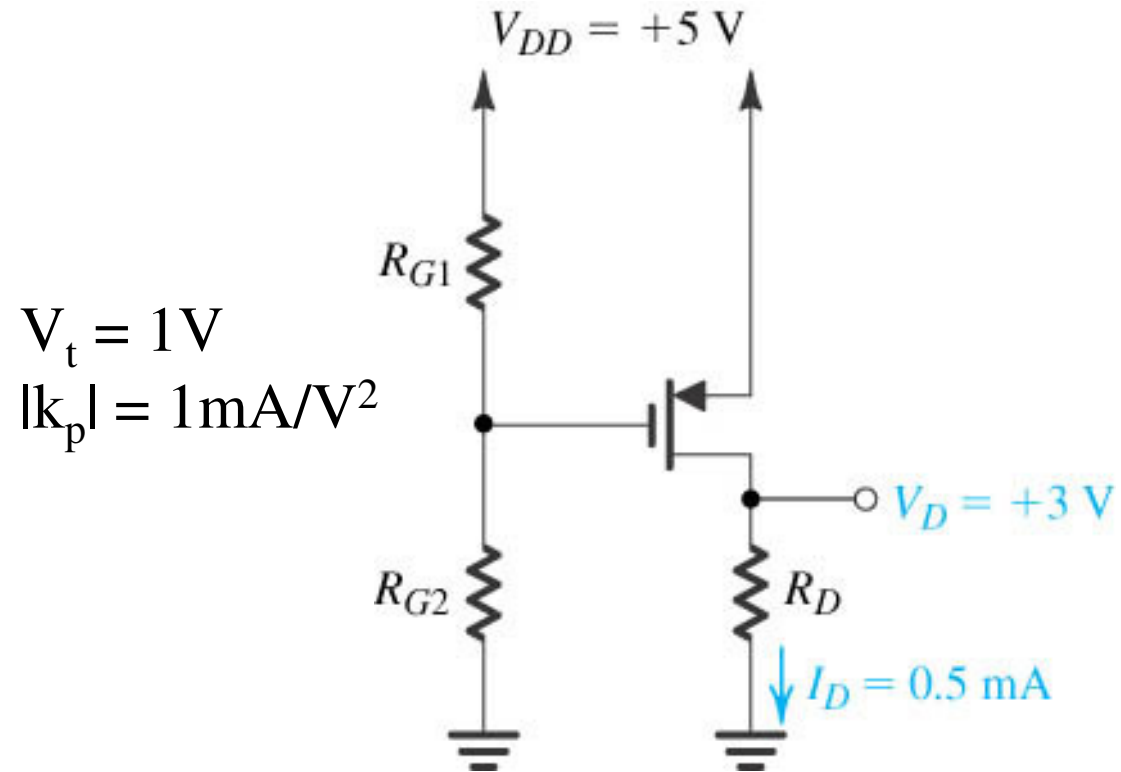


Example (4)



(a)

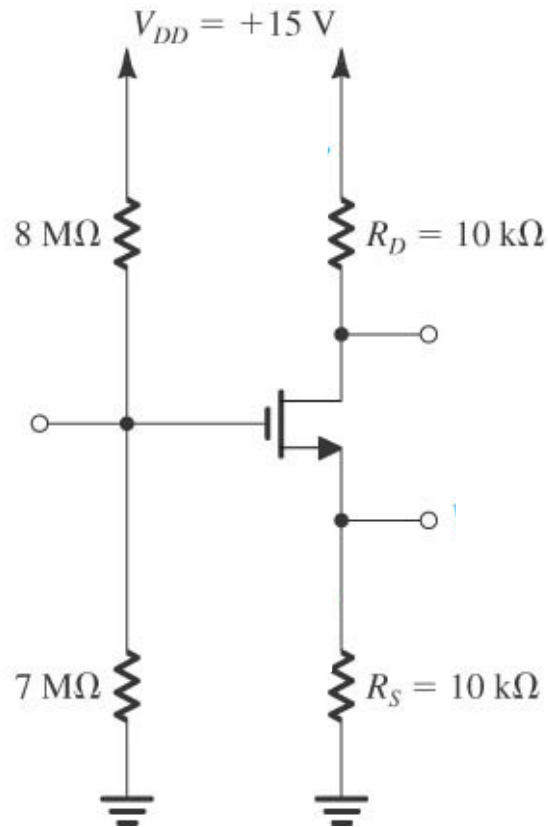
Example (5)



Example (6)

$$V_t = 1\text{V}$$

$$k_n = 1\text{mA/V}^2$$



Load Line

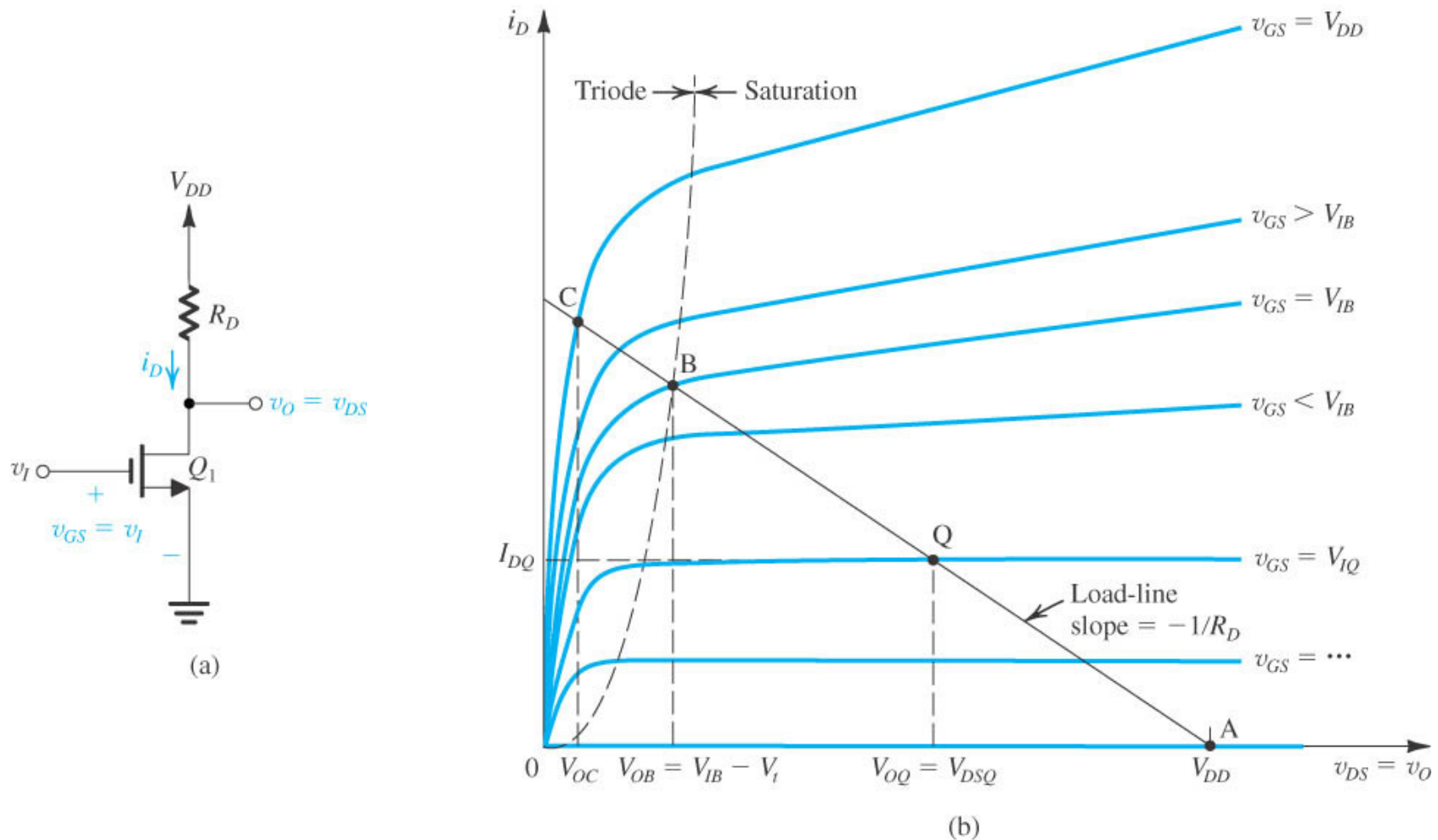


Figure 4.26 (a) Basic structure of the common-source amplifier. (b) Graphical construction to determine the transfer characteristic of the amplifier in (a).