

EECS 170LC Laboratory Assignment #1

Prof. M. Green

Overview

In this lab we measure the dc characteristics of MOSFETs.

Measurement Assignment

You will be using the CD4007 MOSFET transistors provided to you by your lab TA. The data sheet for this part can be downloaded from the lab web page.

- For the circuit shown in Fig. 1(a), set $V_{BS} = 0$ and measure the drain current for at least 20 values of V_{GS} between 0 and 5 V.
 - Repeat part (a) for $V_{SB} = 0.5$ V.
 - Based on the MOSFET model used in the HW #1 simulation assignment and your measurements, what is the W/L ratio for this transistor?
- For the circuit shown in Fig. 1(b), set $V_{BS} = 0$ and $V_{GS} = 2.5$ V and measure the drain current for at least 20 values of V_{DS} between 0 and 5V.
 - Repeat part (a) for $V_{GS} = 5$ V.
- Repeat part 1 using the p-channel transistor circuit shown in Fig. 2(a).
- Repeat part 2 using the p-channel transistor circuit shown in Fig. 2(b).

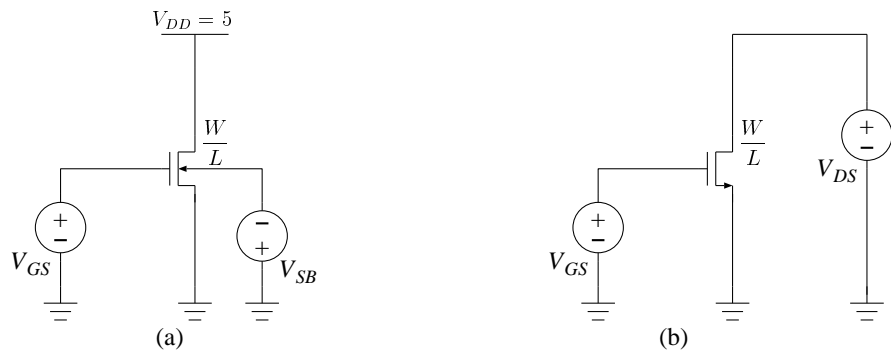


Figure 1:

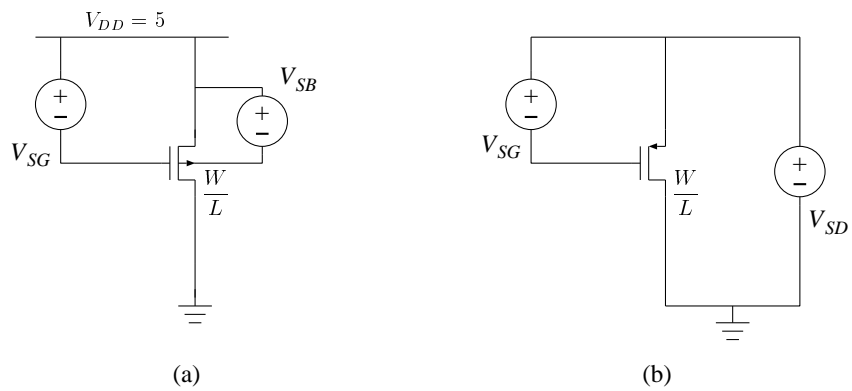


Figure 2: