

Lectures 13 & 14 -- Introduction to MOSFETs

Draw a picture of a MOSFET (both NMOS and PMOS)

What are the regions of operation of a MOSFET, draw a cartoon of each

What voltages determine the boundaries between each region of operation?

What two factors are multiplied and integrated to determine MOSFET drain current?

What is the drain current in each region of MOSFET operation?

Draw a large signal model for a MOSFET

Draw a small signal model for a MOSFET

What are g_m and r_o for a MOSFET small signal model?

What are the r_{in} , r_{out} and a_v of a common source amplifier

Why are MOSFET amplifiers hard to bias? How are g_m , I_D and $V_{GS}-V_T$ related?