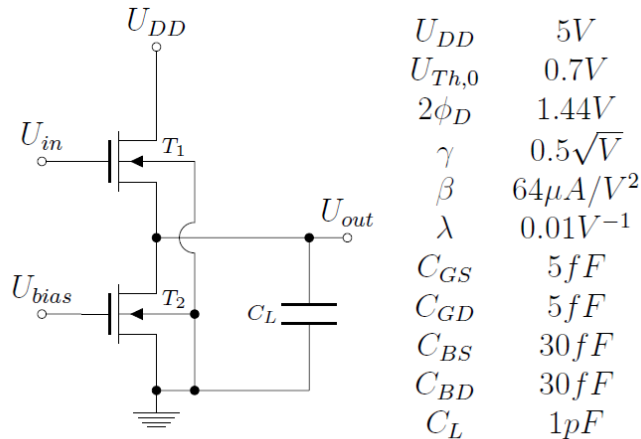




WS 2019/20

Tutorial for Microelectronics III

4. Frequency Response



1. First consider the large signal behaviour of the drawn source follower disregarding the capacities and channel length modulation.
 - (a) How high has the value of U_{bias} to be, in order to set a drain current of $2\mu A$ for T_2 in saturation region?
 - (b) What is the minimum value of U_{in} , in order to ensure this operation?
2. Now please consider the small signal behaviour.
 - (a) Draw the small signal equivalent circuit diagram for the circuit under consideration of parasitic elements.
 - (b) Please make this small signal equivalent circuit as compact as possible.
 - (c) Determine now the transfer function.
 - (d) Where are the poles and zeros of the function?