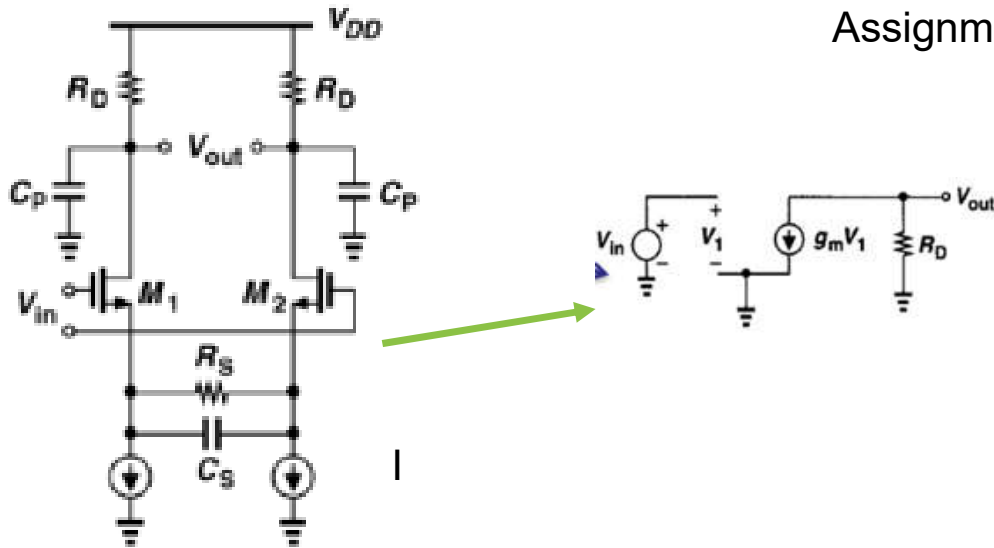


Assignment #1/3



$I = 300\mu\text{A}$, $R_D = 1500\ \Omega$, $R_S = 750\ \Omega$, $\mu C_{ox} = 250 \times 10^{-6}$, $w/l = 10\mu\text{m}/0.13\mu\text{m}$
 $V_{DD} = 1.8\text{V}$, Ignore R_o of M_1, M_2 , one square $R_d/R_a = 400\ \Omega$
 $C_s = 5\text{pF}$, $C_p = 40\text{fF}$, one square of $C_s = 5\text{fF}$

assignment

- 1) Solve for g_m , sketch the small signal model
- 2) Solve and plot V_{out}/V_{in} in dB using small signal model vs. frequency
 At DC and $f = \infty$ (ignore C_p) - what is the gain
 can u comment what is this circuit good for ?
- 3) Draw the Layout in μm , relatively to scale, this circuit (without the I)

Lectures

<http://www.gigalogchip.com/lectures.html>