

COMPOSANTS SEMI-CONDUCTEURS

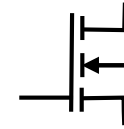
XIII) Solutions S13

P.A. Besse

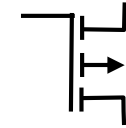
EPFL



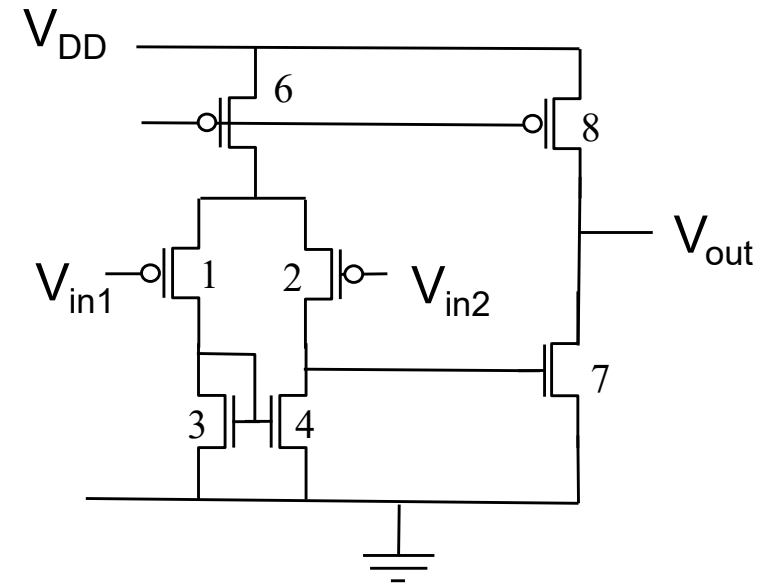
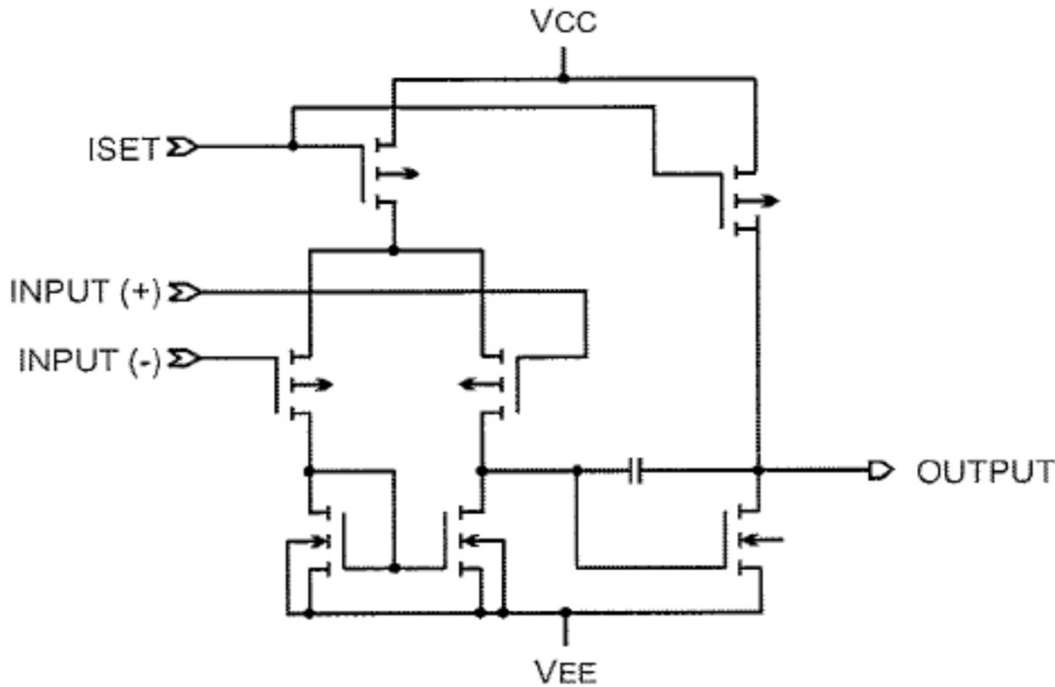
Interprétez ce schéma:



NMOS



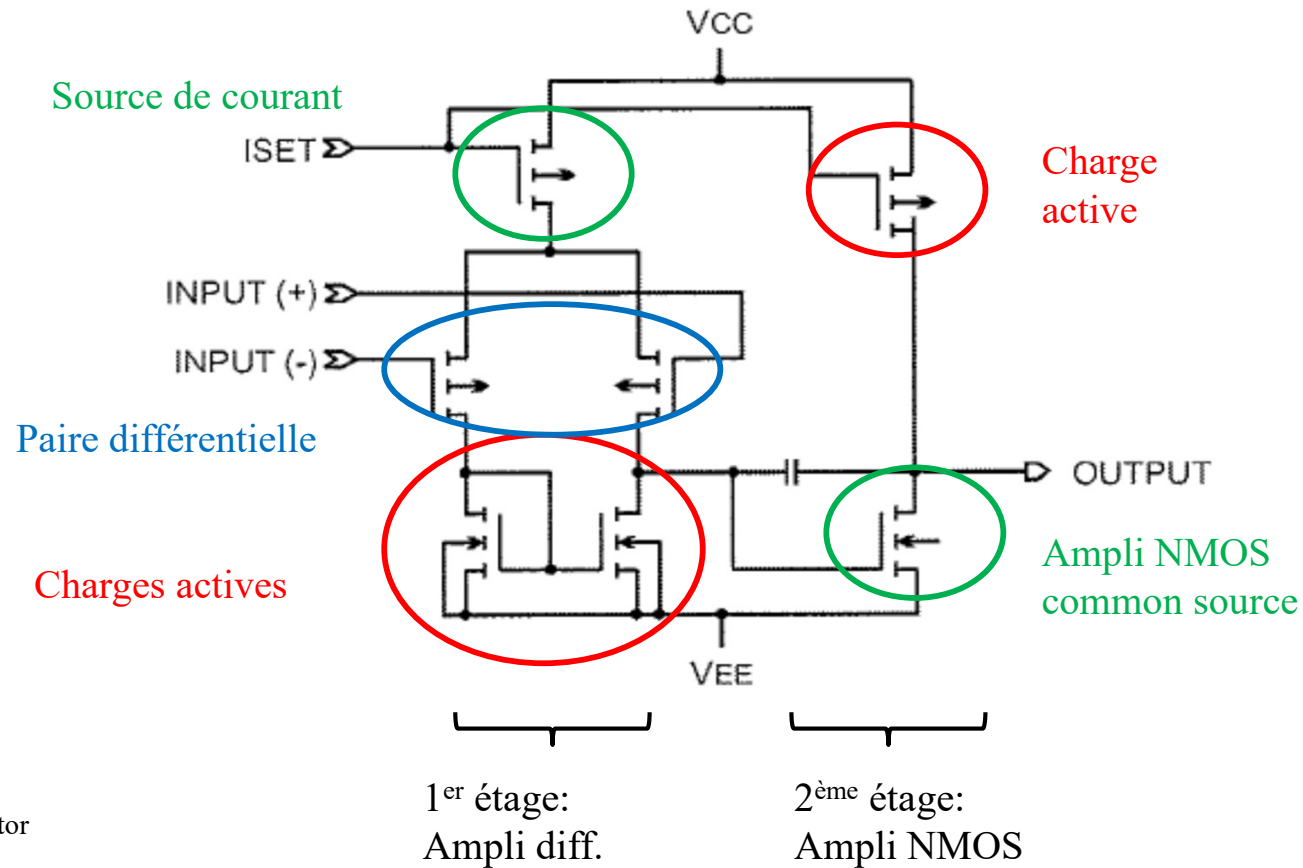
PMOS



MC14573 from Motorola Semiconductor

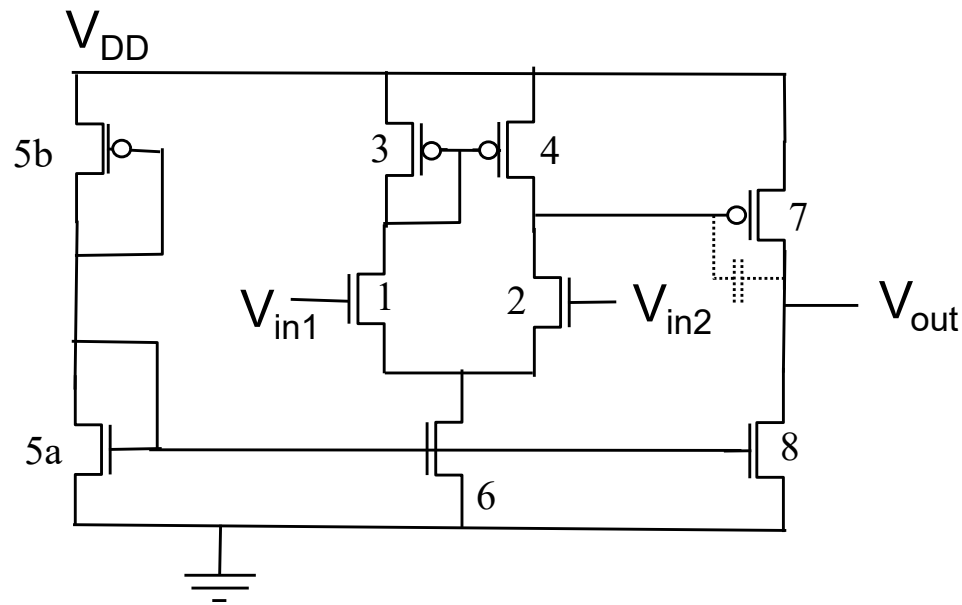


OpAmp deux étages mais basé sur une entrée PMOS

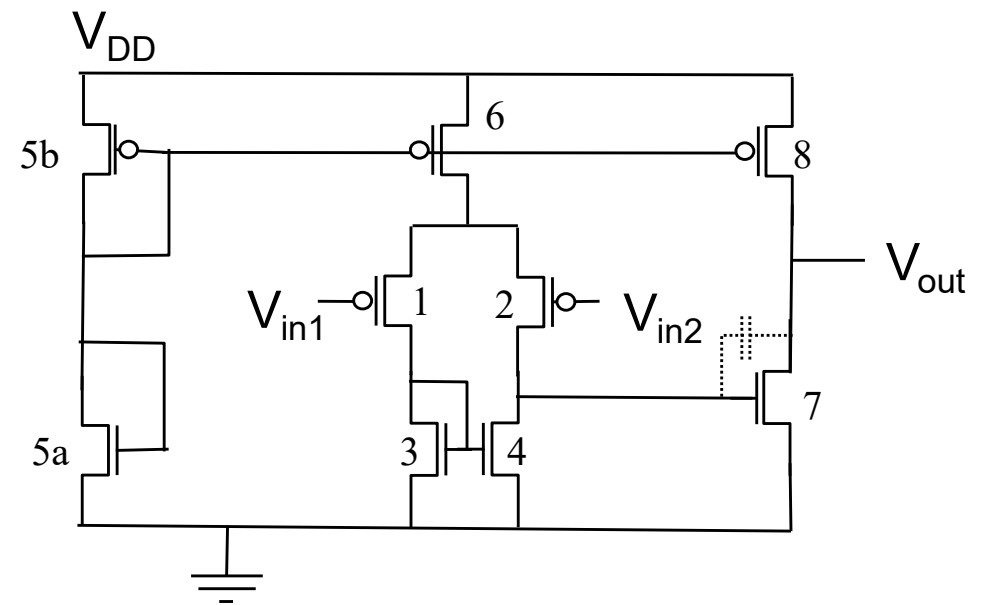


MC14573 from
Motorola Semiconductor

NMOS inputs

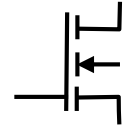


PMOS inputs

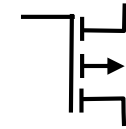




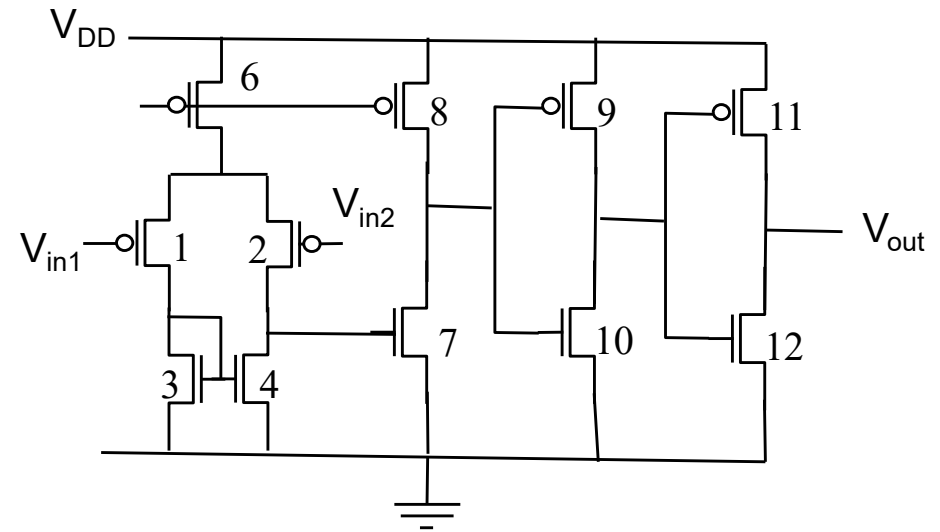
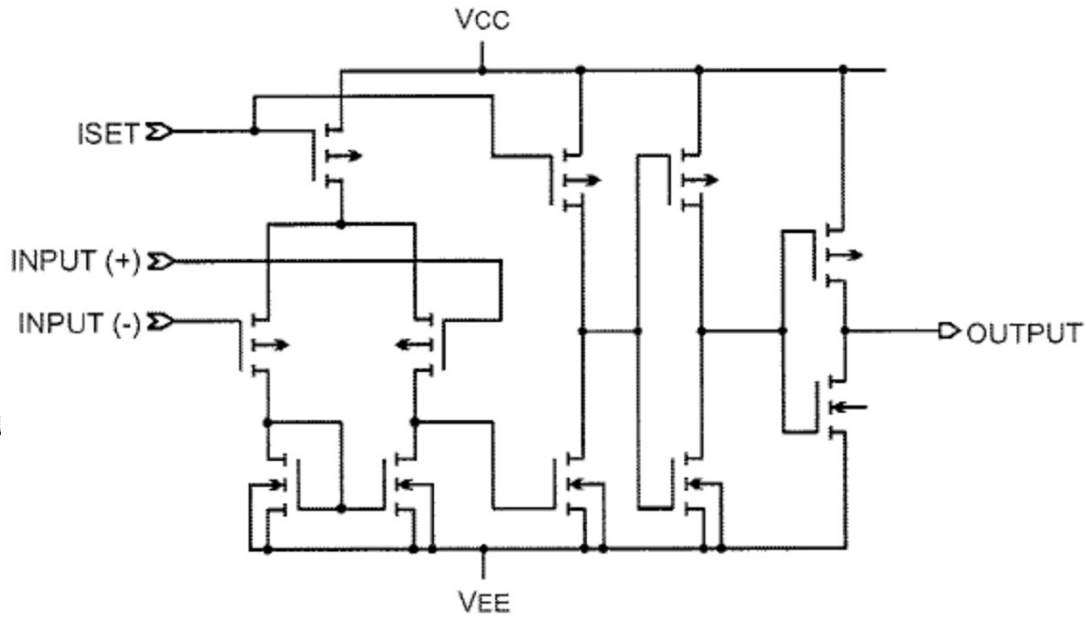
Interprétez ce schéma:



NMOS



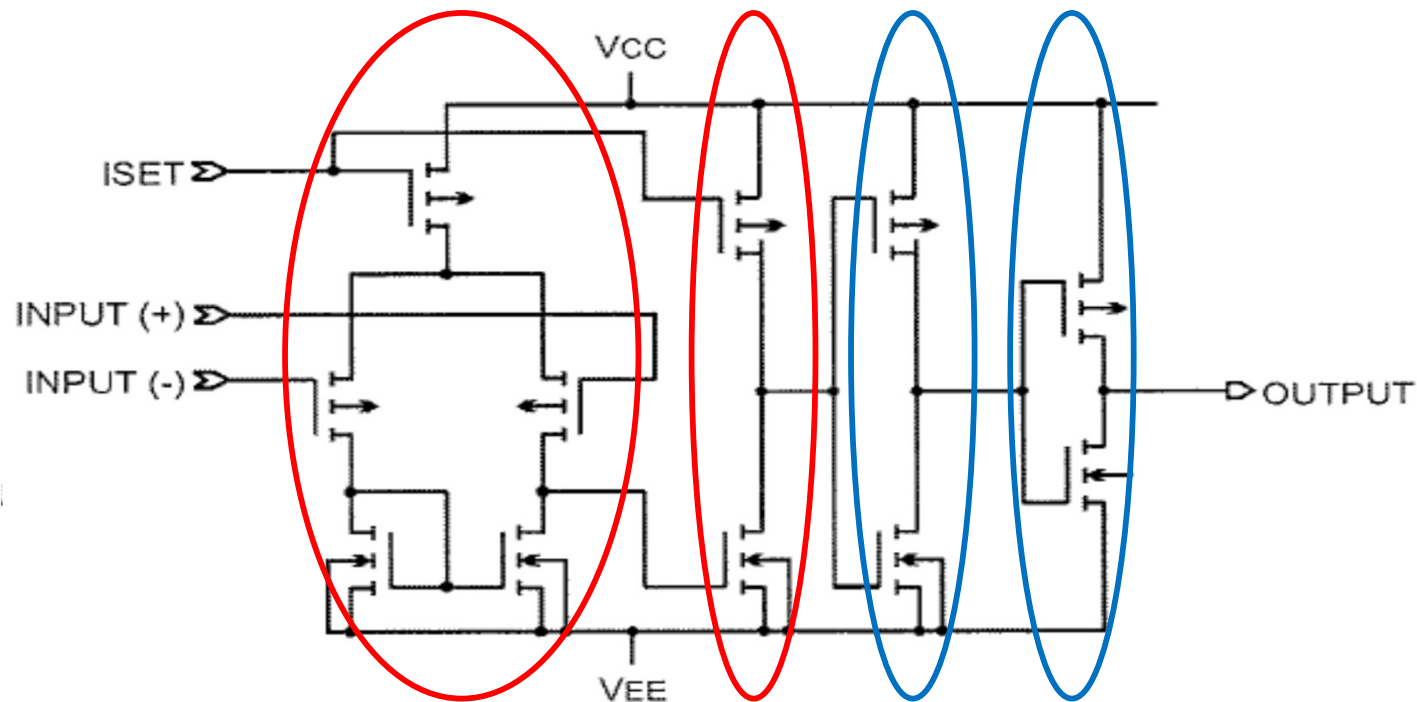
PMOS



MC14574 from Motorola Semiconductor



Comparateur = OpAmp 2 étages et 2 inverseurs en amplificateurs



MC14574 from
Motorola Semiconductor

Ampli diff.
PMOS

Ampli
NMOS

Inverter
CMOS

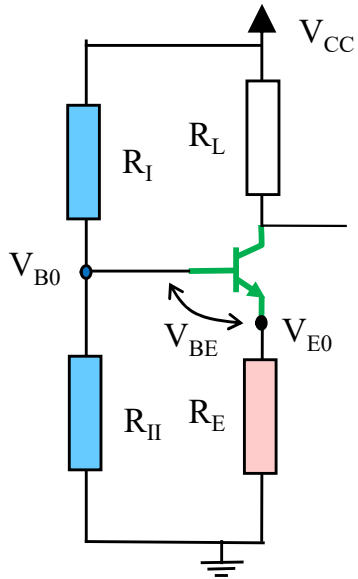
Inverter
CMOS

Exercice E13.2: Ampli de tension avec NMOS

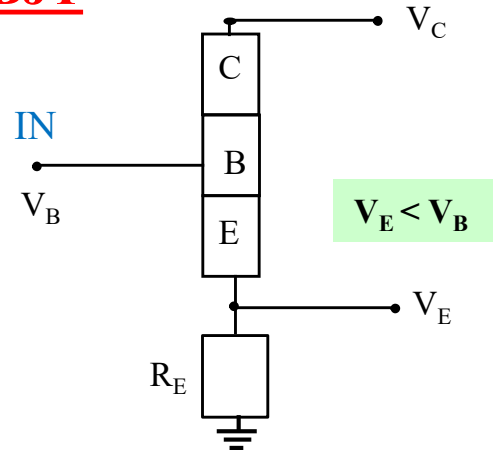


Utilisez un NMOS comme ampli de tension.
Inspirez-vous du chapitre 7 sur les BJT.
Remplacez le transistor bipolaire par un NMOS !

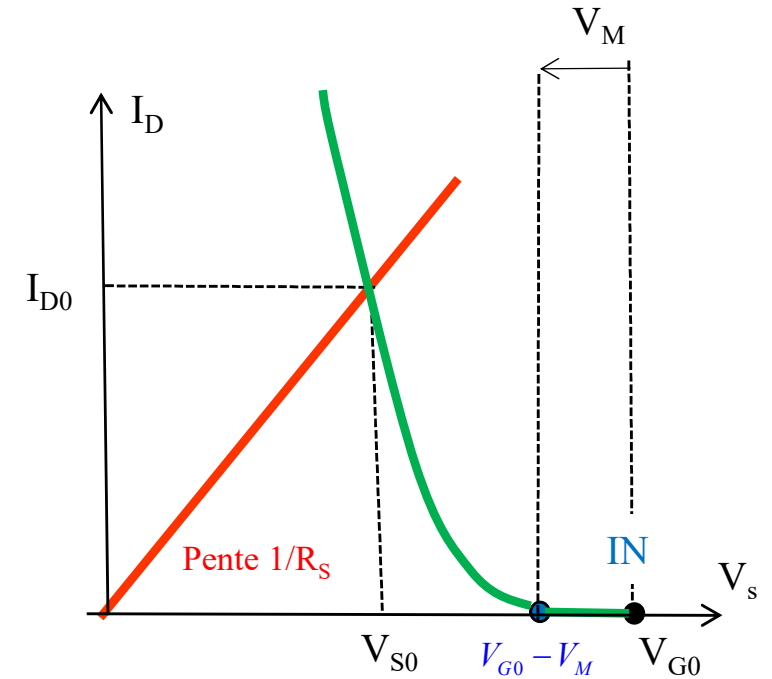
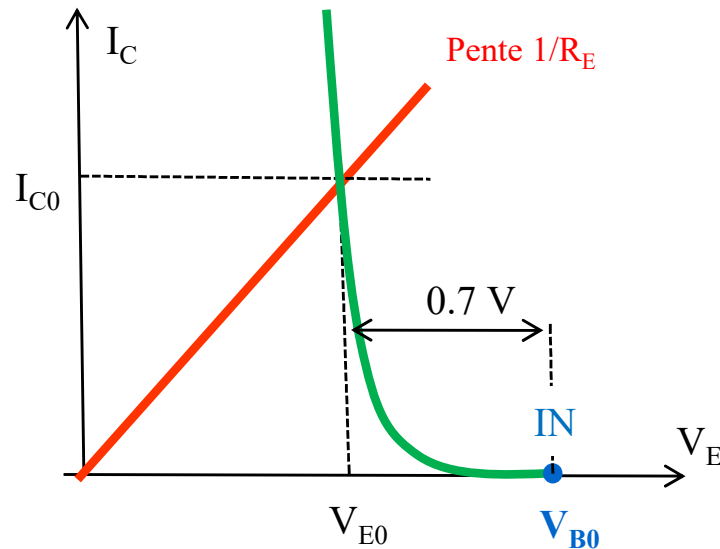
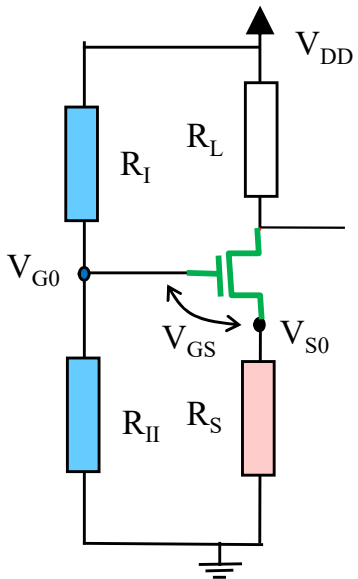
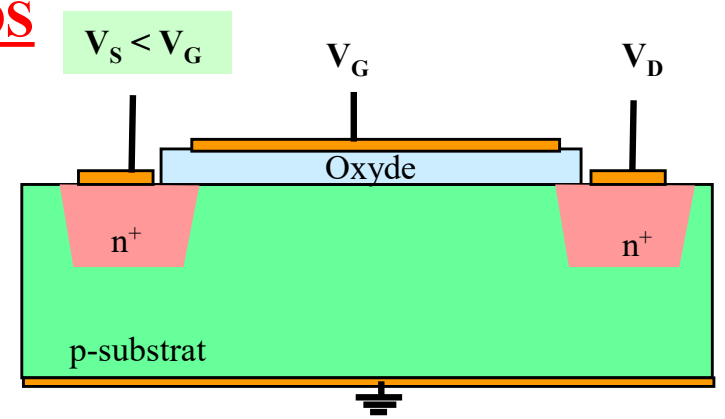
Comparaison BJT-NMOS

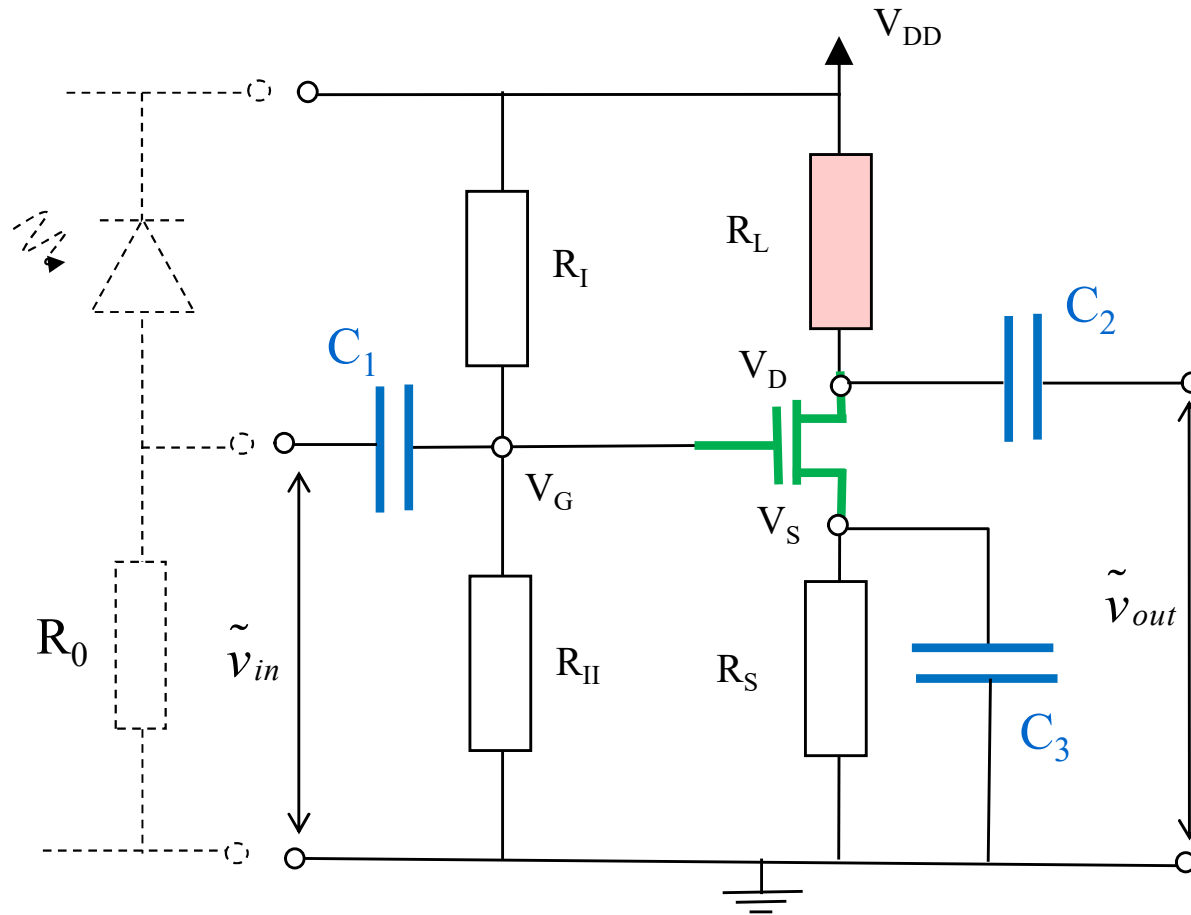


BJT



NMOS





Gain en tension

$$\frac{\tilde{v}_{out}}{\tilde{v}_{in}} \cong -g_m \cdot R_L$$