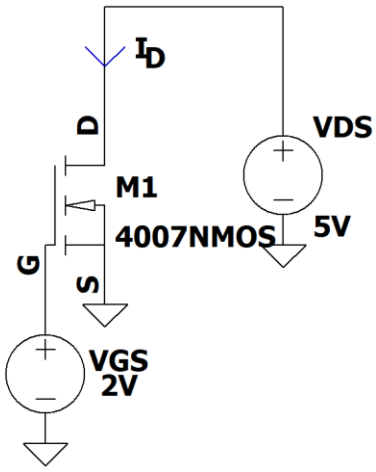
NMOS and PMOS examples using LTspice (linear.com)

version 11 March 2020

NMOS

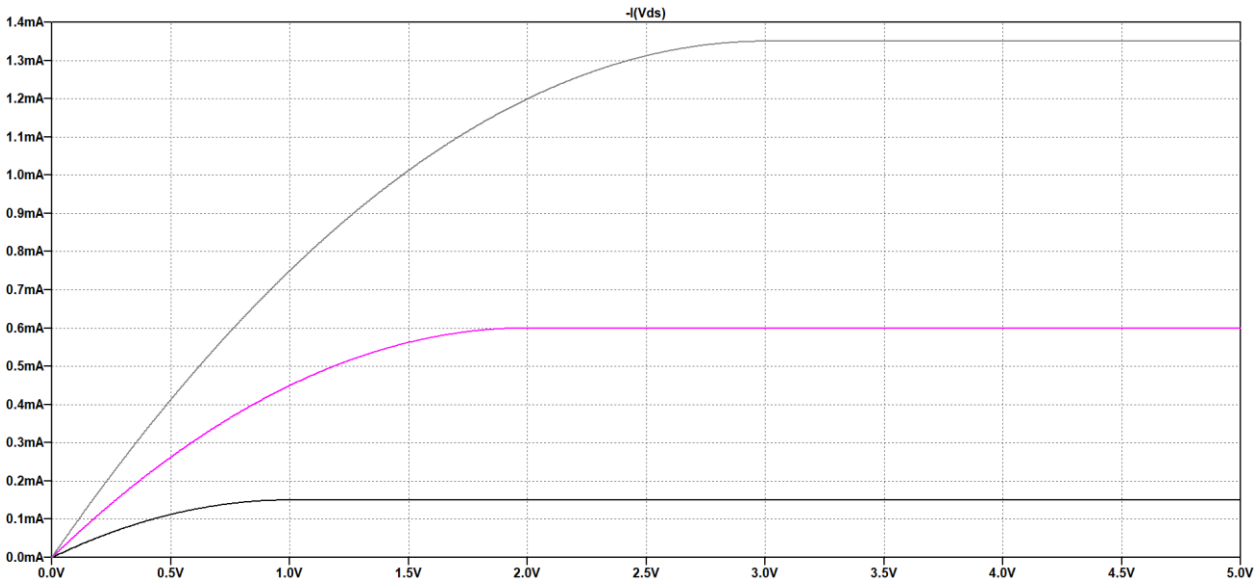


.dc VDS 0 5 1mV VGS 0 4 1
.model 4007NMOS NMOS(LEVEL=2 KP=0.3E-3 VTO=1)

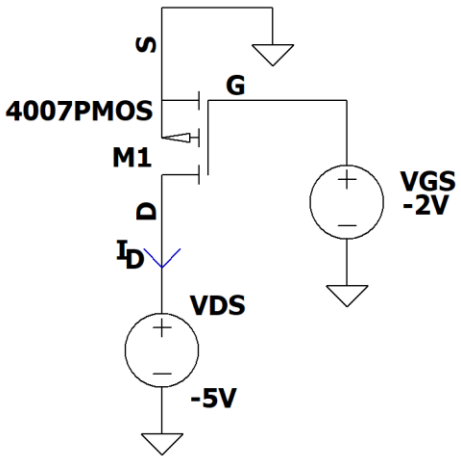
SAT CURRENT AT VGS=4 => KP/2 (4-1)^2 = 1.35mA
BODY TO NEGATIVE MOST SUPPLY (0V)

LTspice (linear.com) Basic NMOS Example
(c) 2012 Damon A. Miller

REF: Sedra and Smith, Microelectronic Circuits, 6th ed.



PMOS



.dc VDS -5 0 1mV VGS -4 0 1
.model 4007PMOS PMOS(LEVEL=2 KP=1.0E-3 VTO=-1)
SAT CURRENT AT VGS=-4V => KP/2 (-4--1)^2 = 4.5mA
BODY TO POSITIVE MOST SUPPLY (0V)

LTspice (linear.com) Basic PMOS Example
(c) 2012 Damon A. Miller

REF: Sedra and Smith, Microelectronic Circuits, 6th ed.