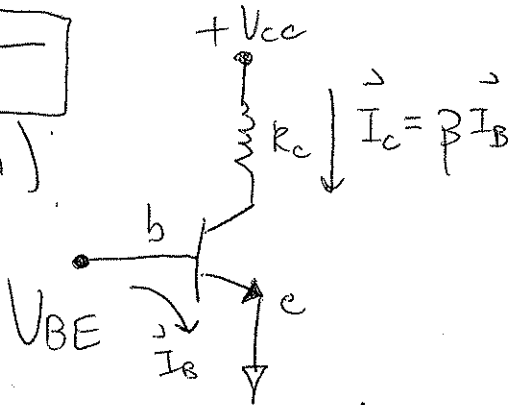


FET Characteristics

BJT
(npn)

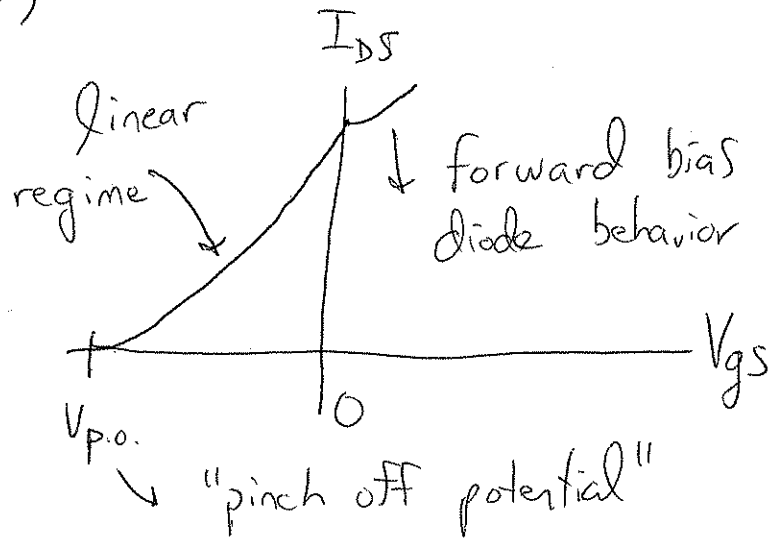
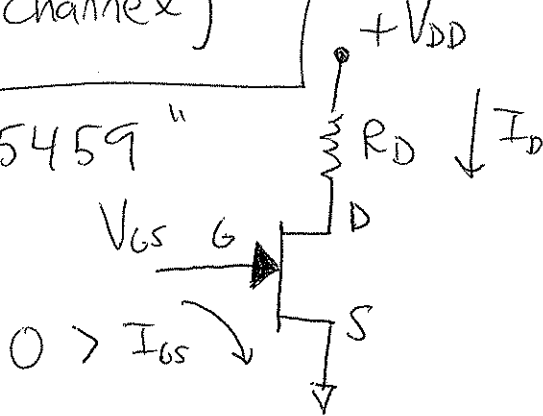


Forward bias the b-e junction and multiply I_B by β .

(Junction field effect transistor)

JFET
(n-channel)

"2N5459"

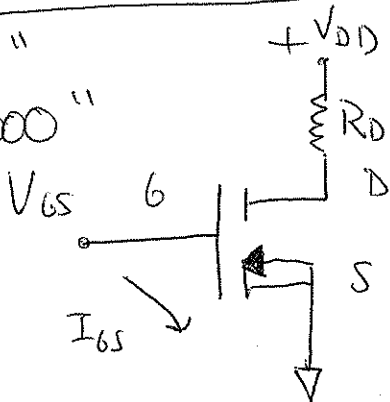


$V_{GS} < 0$ only !!!

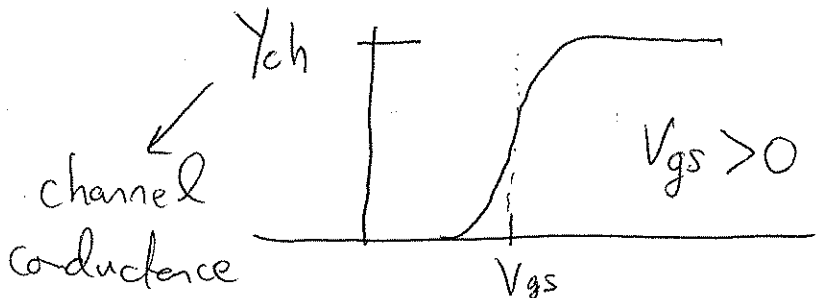
(metal-oxide-semiconductor FET)

MOSFET
(n-channel enhancement)

"BS170"
"2N7000"



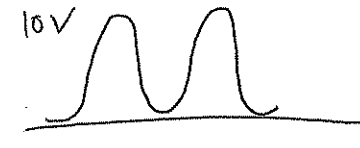
$$I_D = \frac{V_{DD}}{R_D + R_{ch}(V_{GS})}$$



JFET experiments!

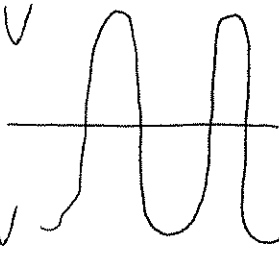
① For $V_{DD} = 10V$, vary $V_{p0} \leq V_{gs} \leq 0V$,
measure I_D , assume $I_D \approx I_{DS}$,
plot I_{DS} vs. V_{gs}

② Set $V_{gs} = -V_{p0}/2$ (make sure it's negative)

- plot I_{DS} vs. $V_{DD} = 0$ 

Is the channel ohmic.

MOSFET Experiments

① for $V_{DD} = +10V$, vary $V_{gs} =$ 
measure I_D , Plot (Y_{ch} vs. V_{gs})

② for $V_{gs} = \frac{1}{2}$ or potential, vary
 V_{DD} and measure I_D
Is the channel ohmic?