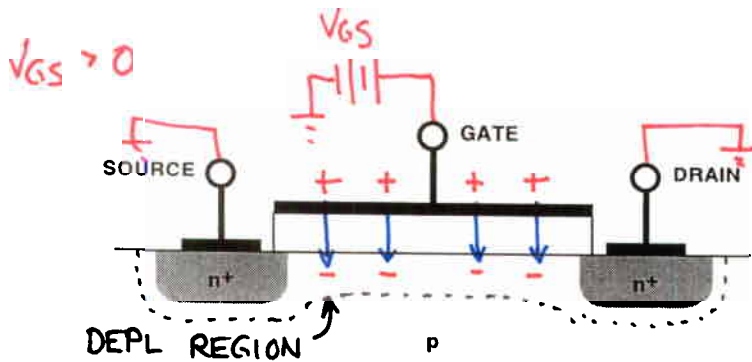


$V_{GS} > V_{th}$ THRESHOLD VOLTAGE

INVERSION

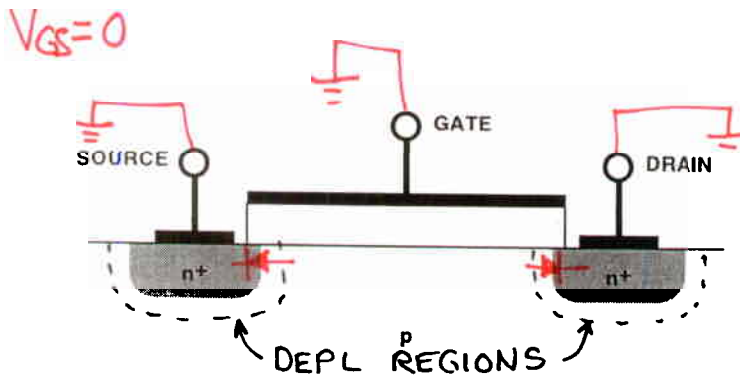
- "INVERT" SURFACE FROM p-TYPE TO n-TYPE
- ATTRACT MOBILE CARRIERS OF "CORRECT" SIGN
- I_D CAN FLOW WHEN V_{DS} APPLIED



$V_{GS} > 0$

DEPLETION

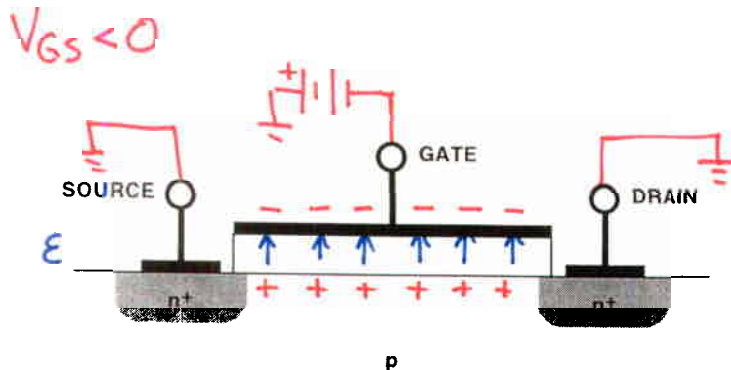
- DEplete CHANNEL OF "WRONG" SIGN CARRIERS
- FIXED CHARGES "UNCOVERED"
- STILL $I_D = 0$



$V_{GS} = 0$

BACK TO BACK DIODES IN D-S PATH

$I_D = 0$



$V_{GS} < 0$

"ACCUMULATION"

$I_D = 0$

TURNED "OFF" EVEN MORE