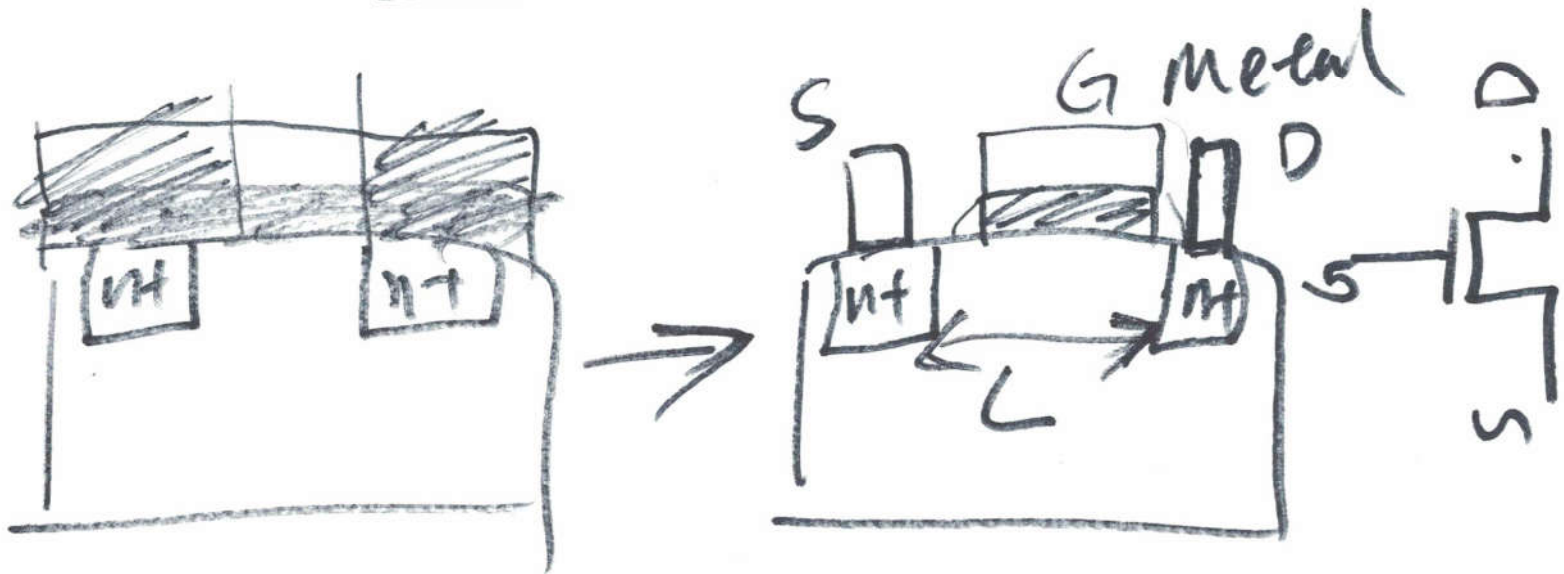
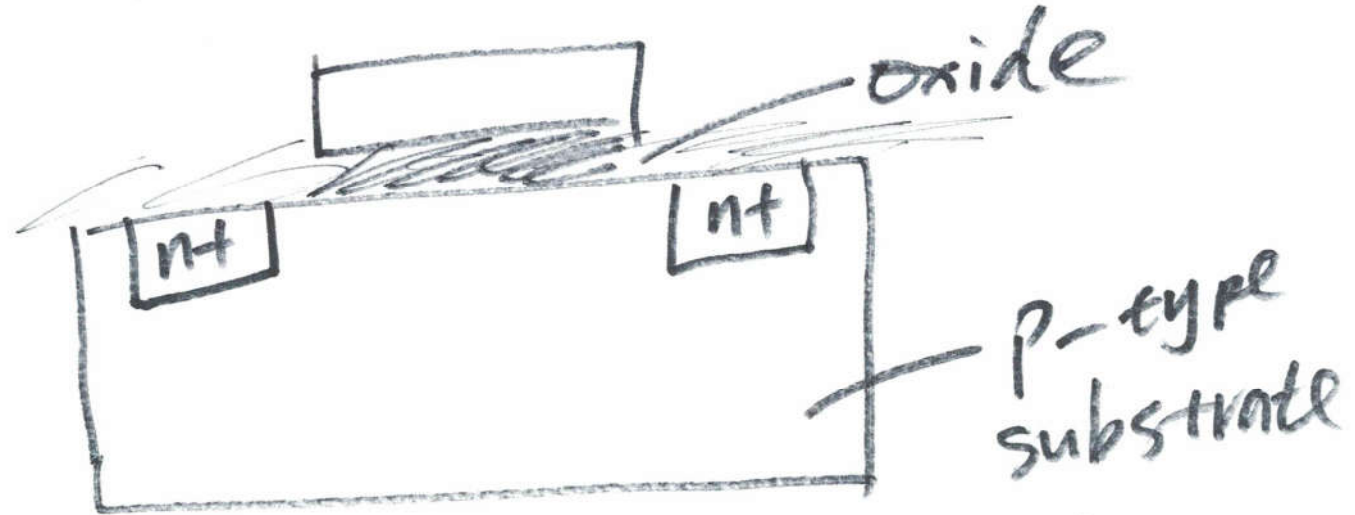
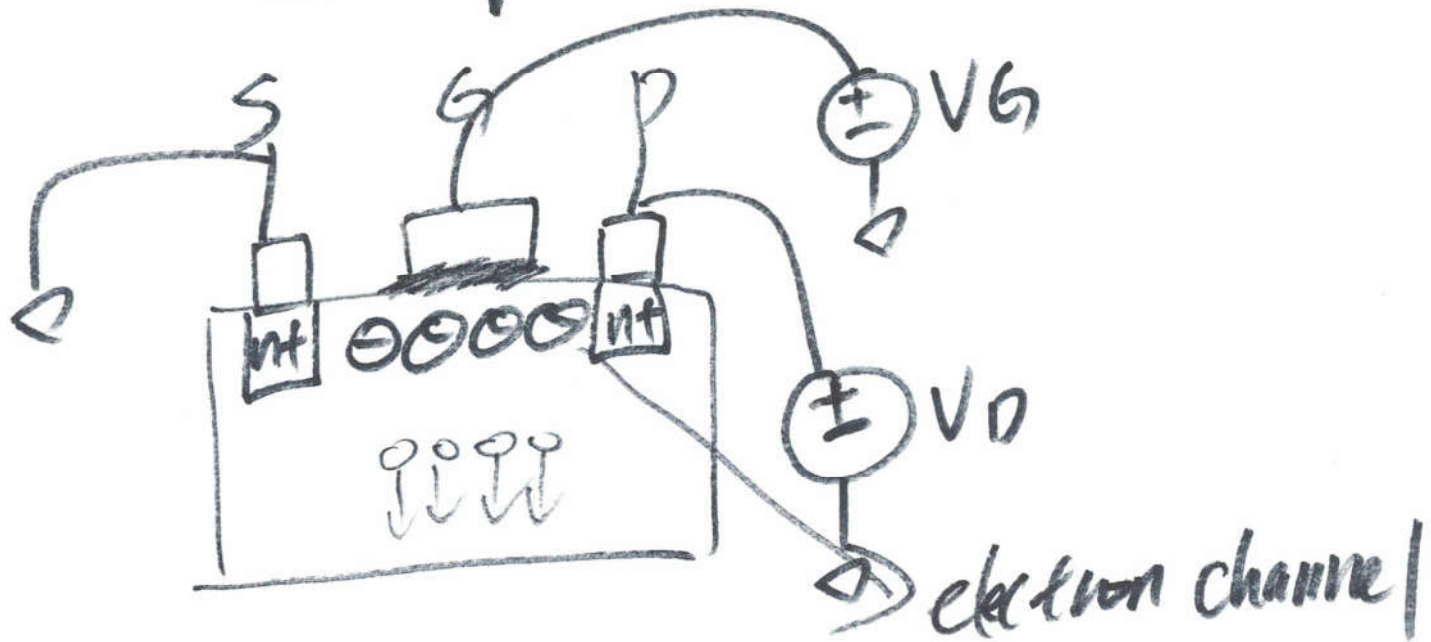
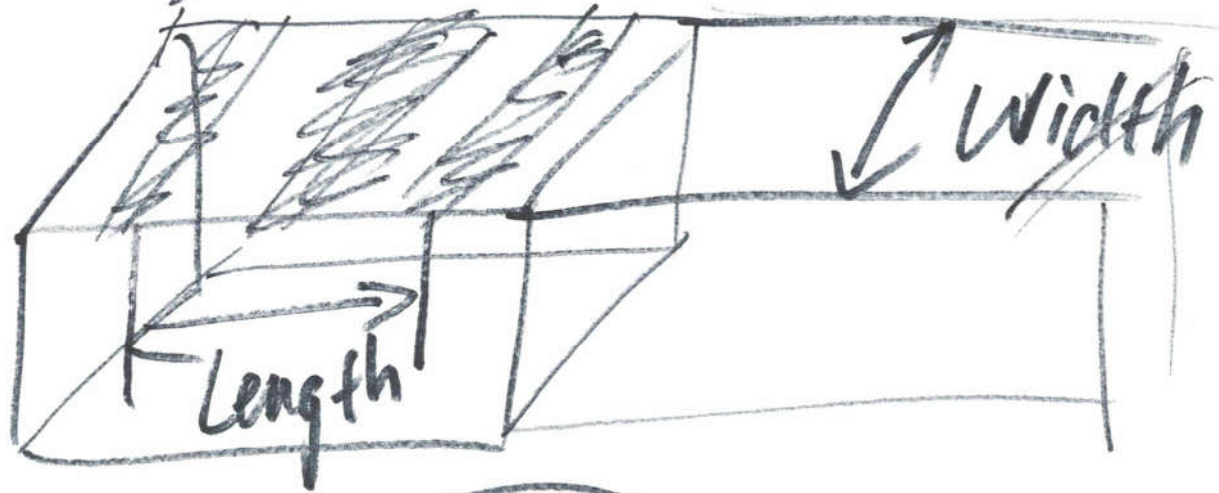


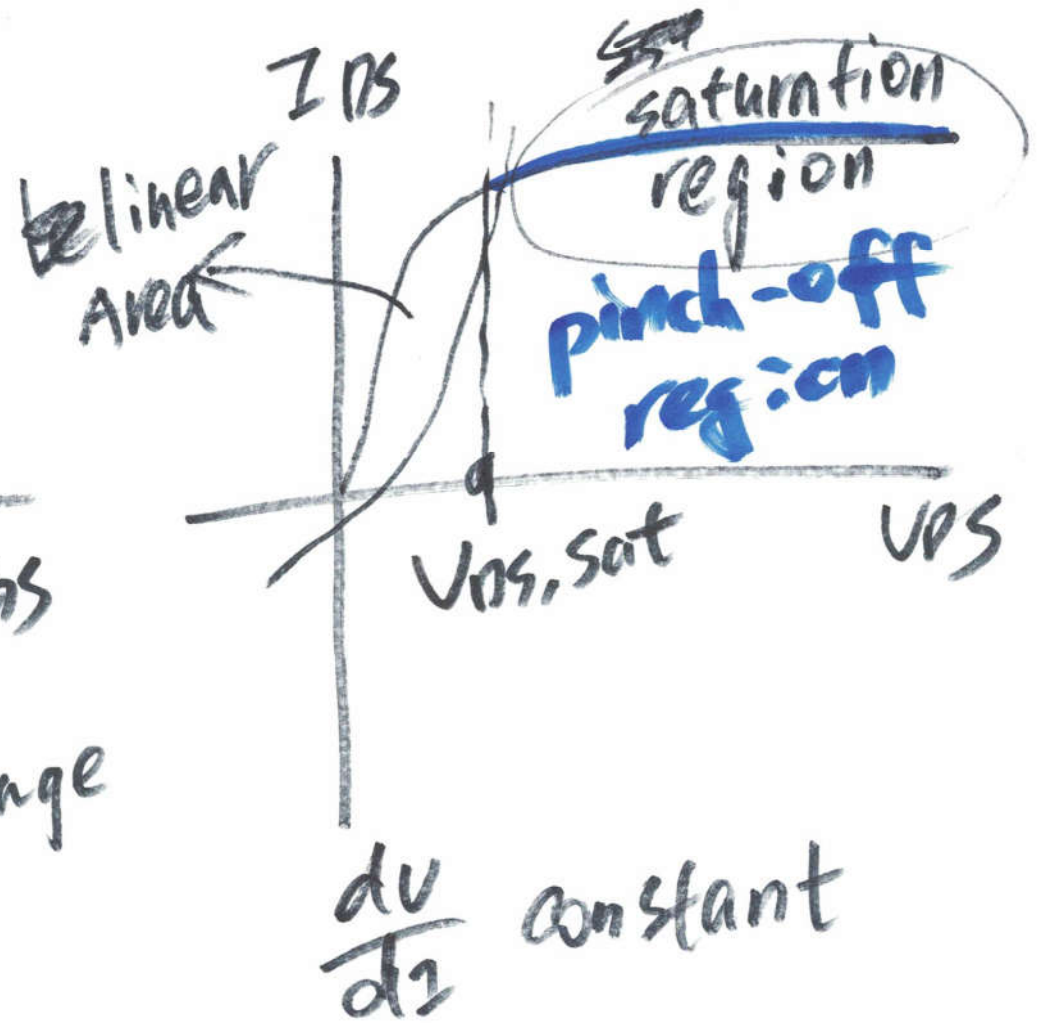
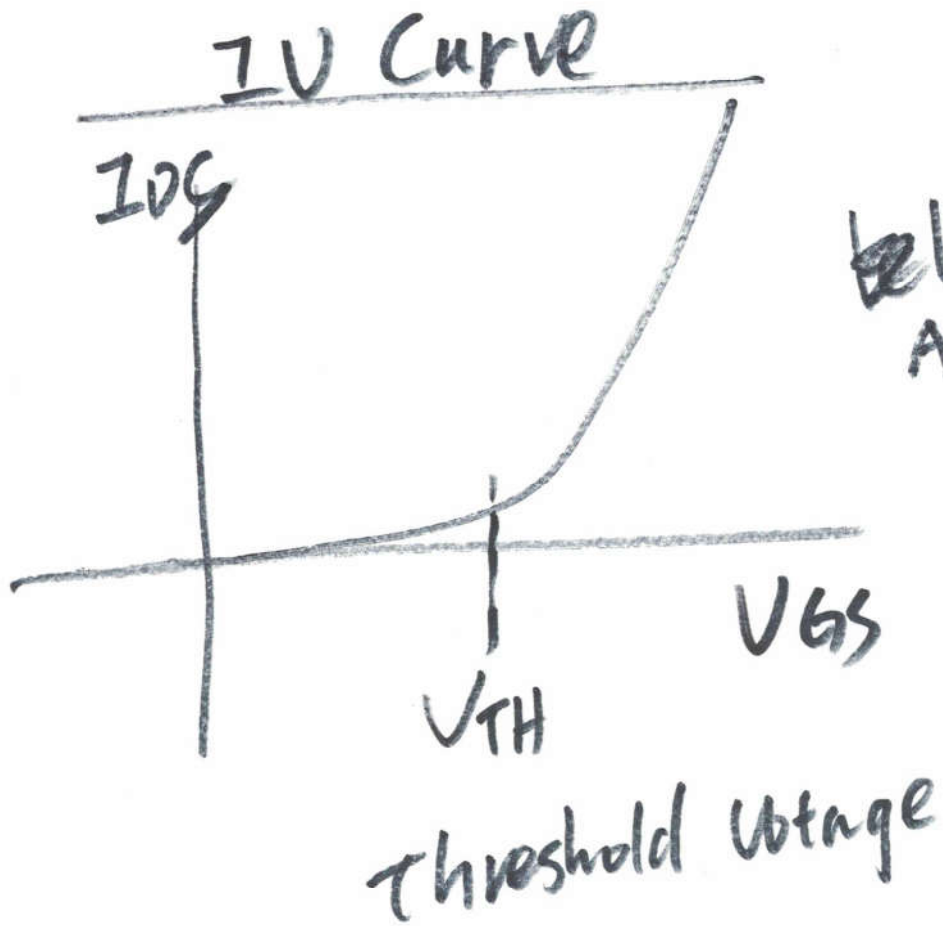
MOSFET

① N-type MOSFET (NMOS)



Source Gate Drain

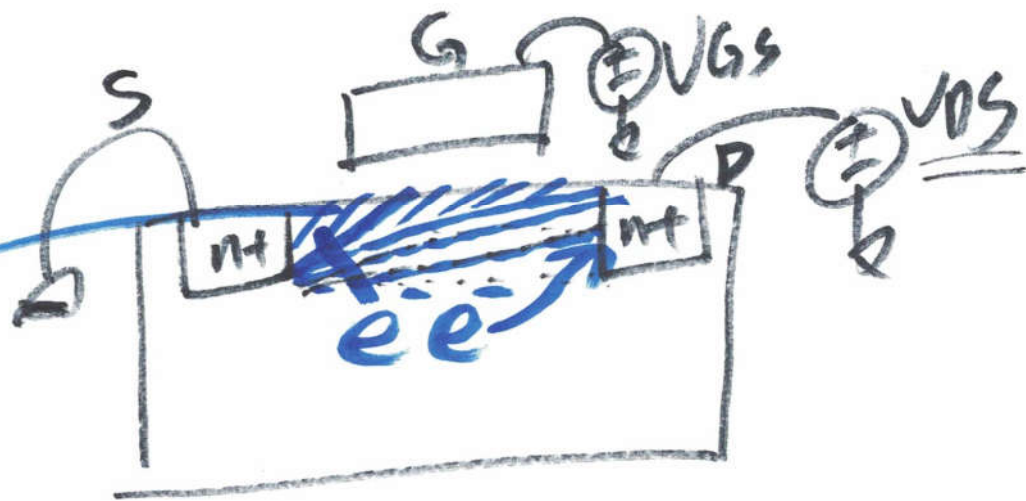




3

pinch-off

Does not mean channel blockage.



① Must have $V_{GS} > V_{TH}$, to turn on the channel.

② when $V_{GS} > V_{TH}$, and $V_{DS} \leq V_{GS} - V_{TH}$,
Linear region.

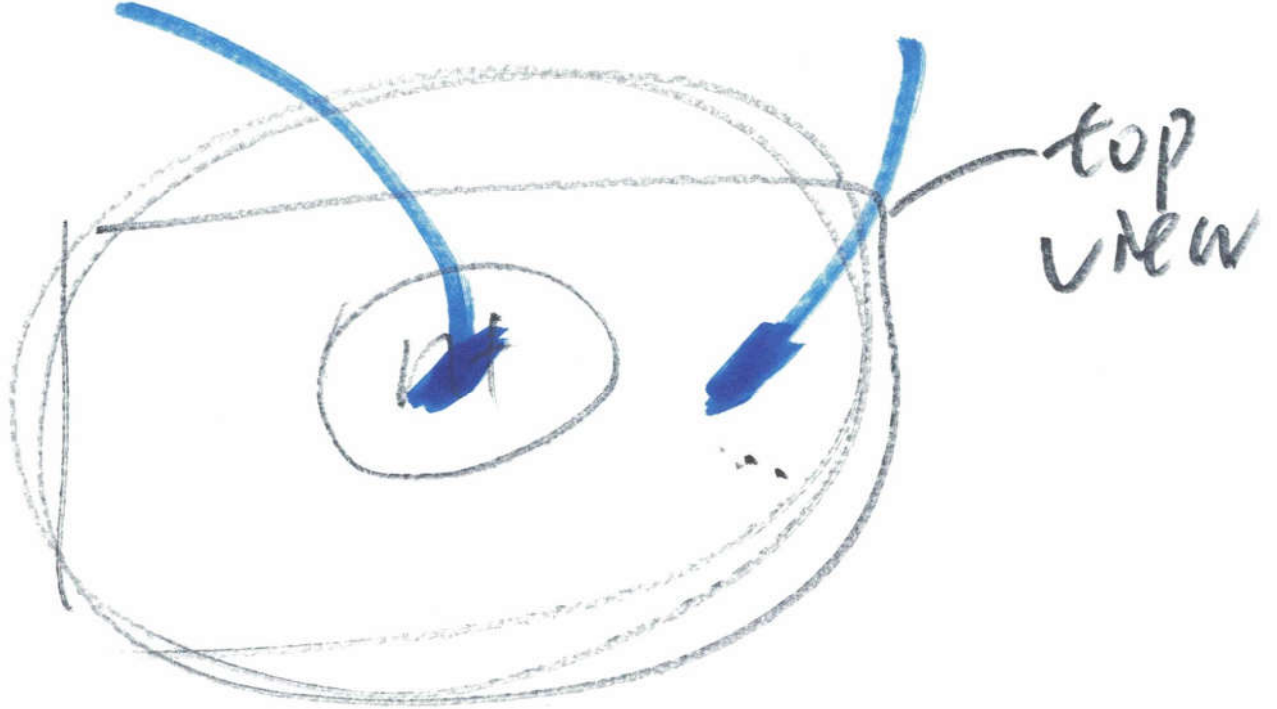
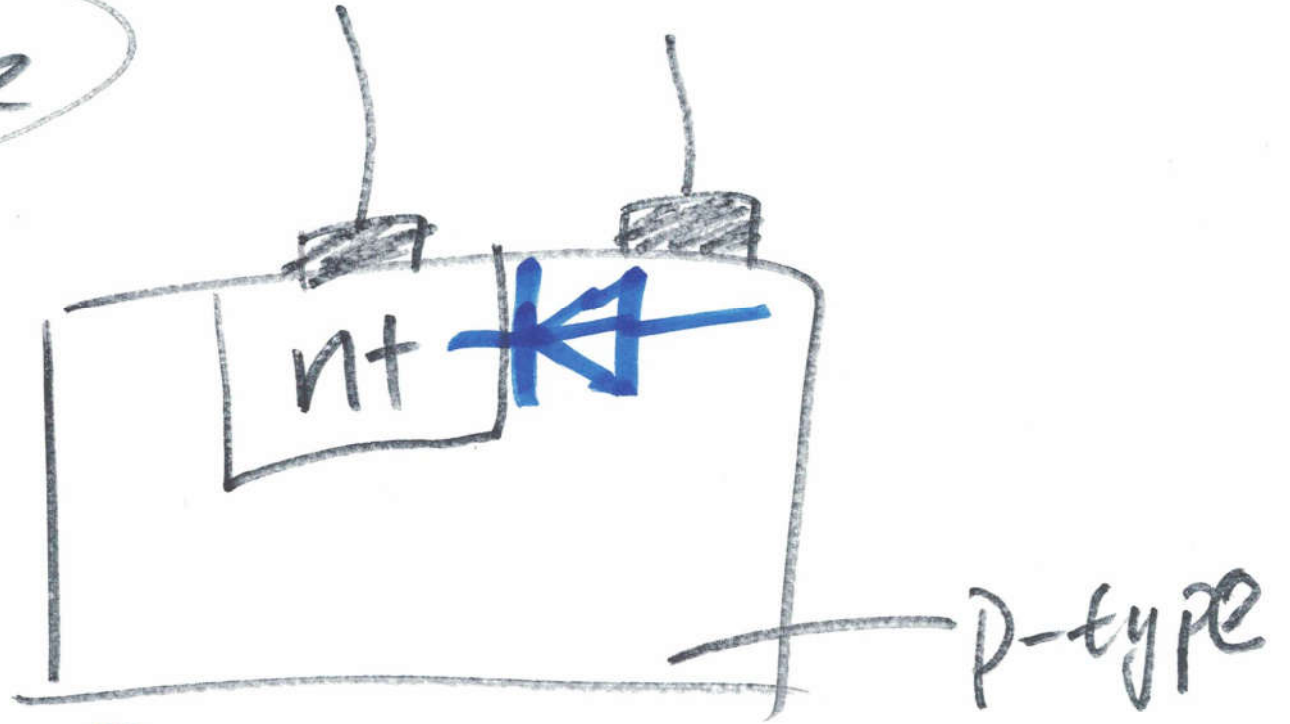
$$V_{GS} - V_{TH} = V_{DS, sat}$$

③ when $V_{GS} > V_{TH}$, and $V_{DS} > V_{DS, sat}$,

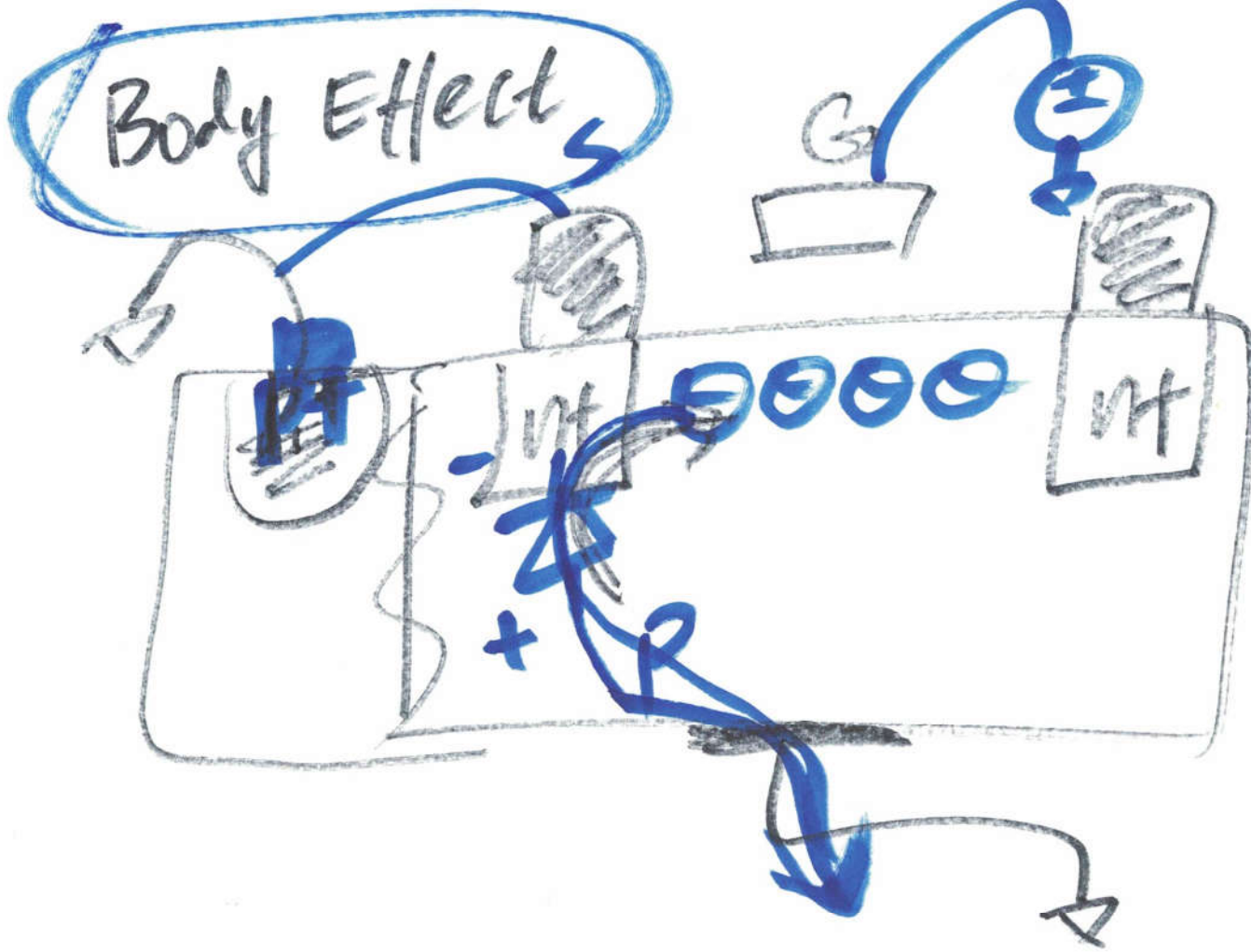
Saturation Region

④

Diode

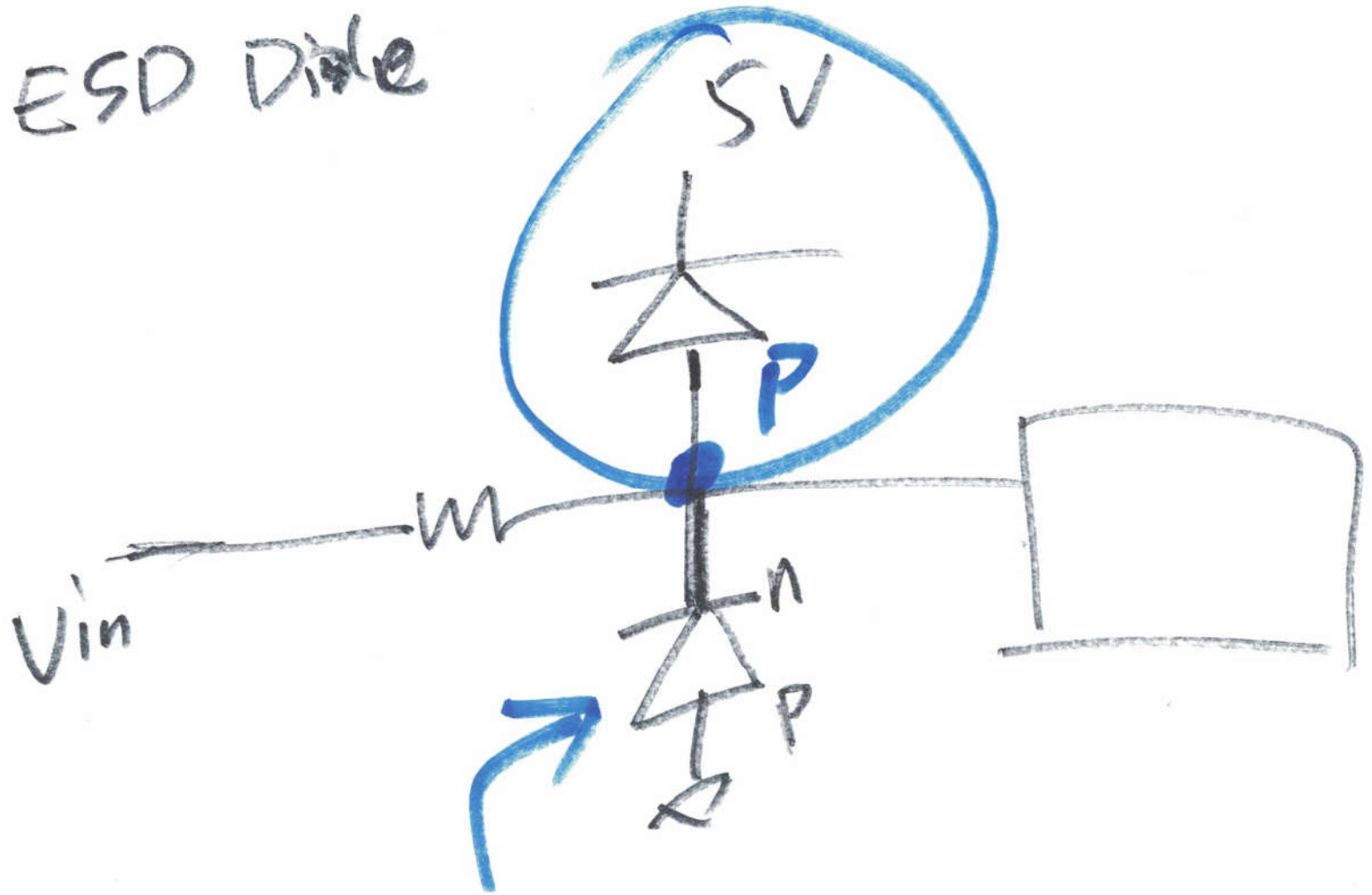


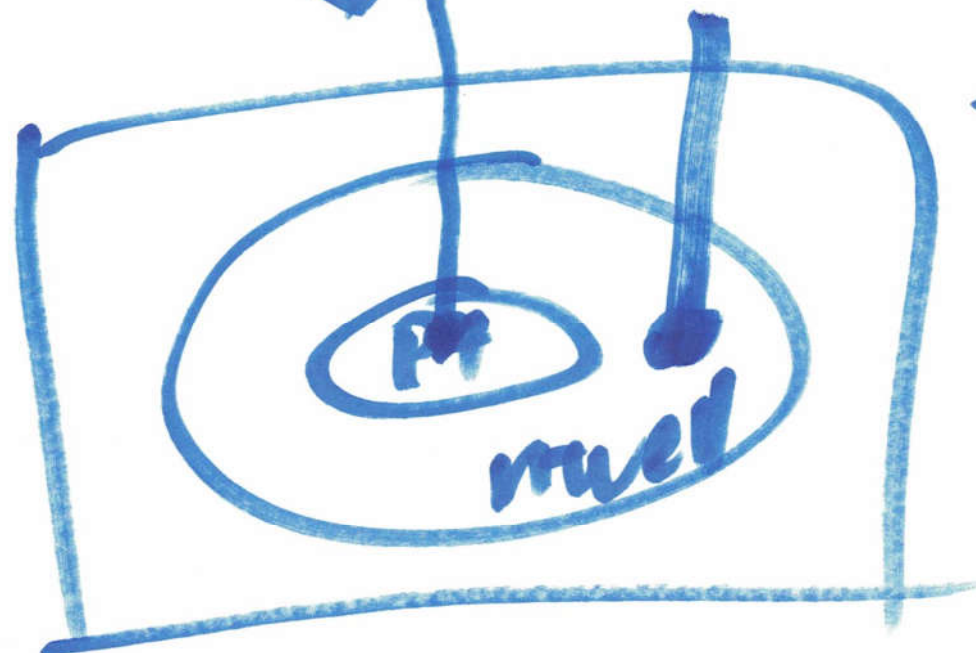
5



6

ESD Diode





top view