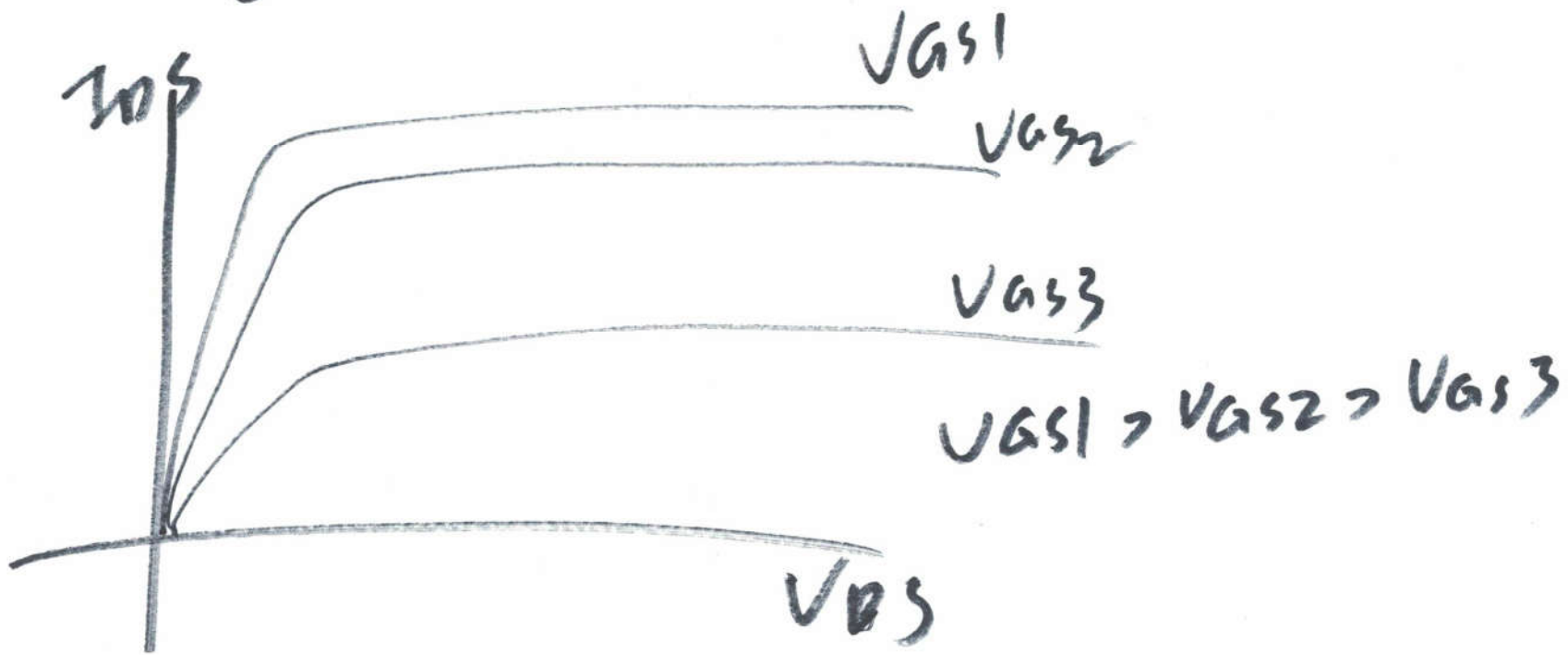
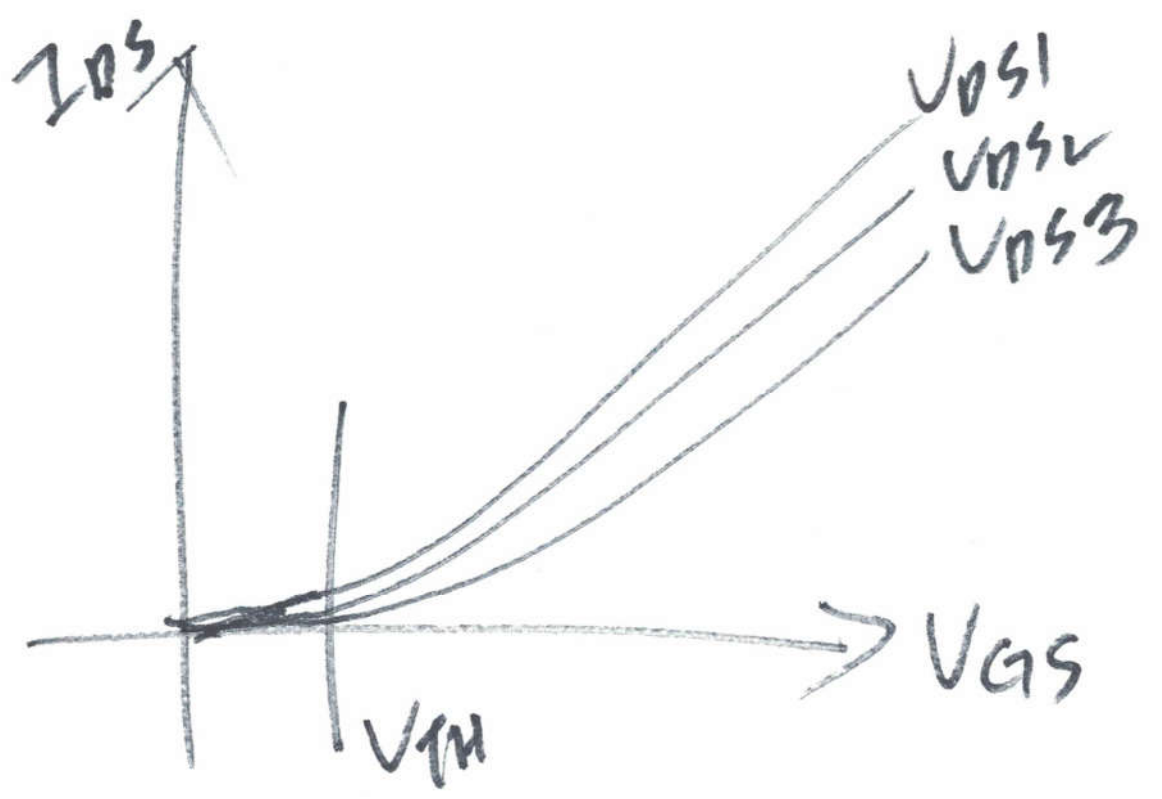
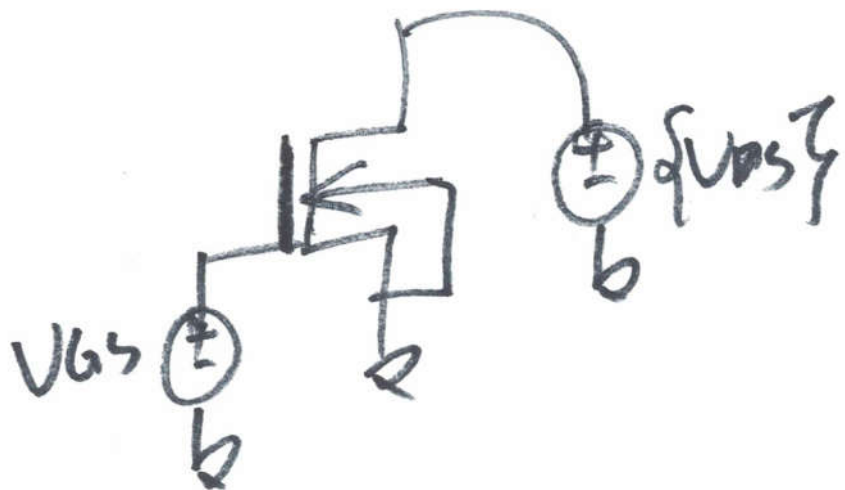


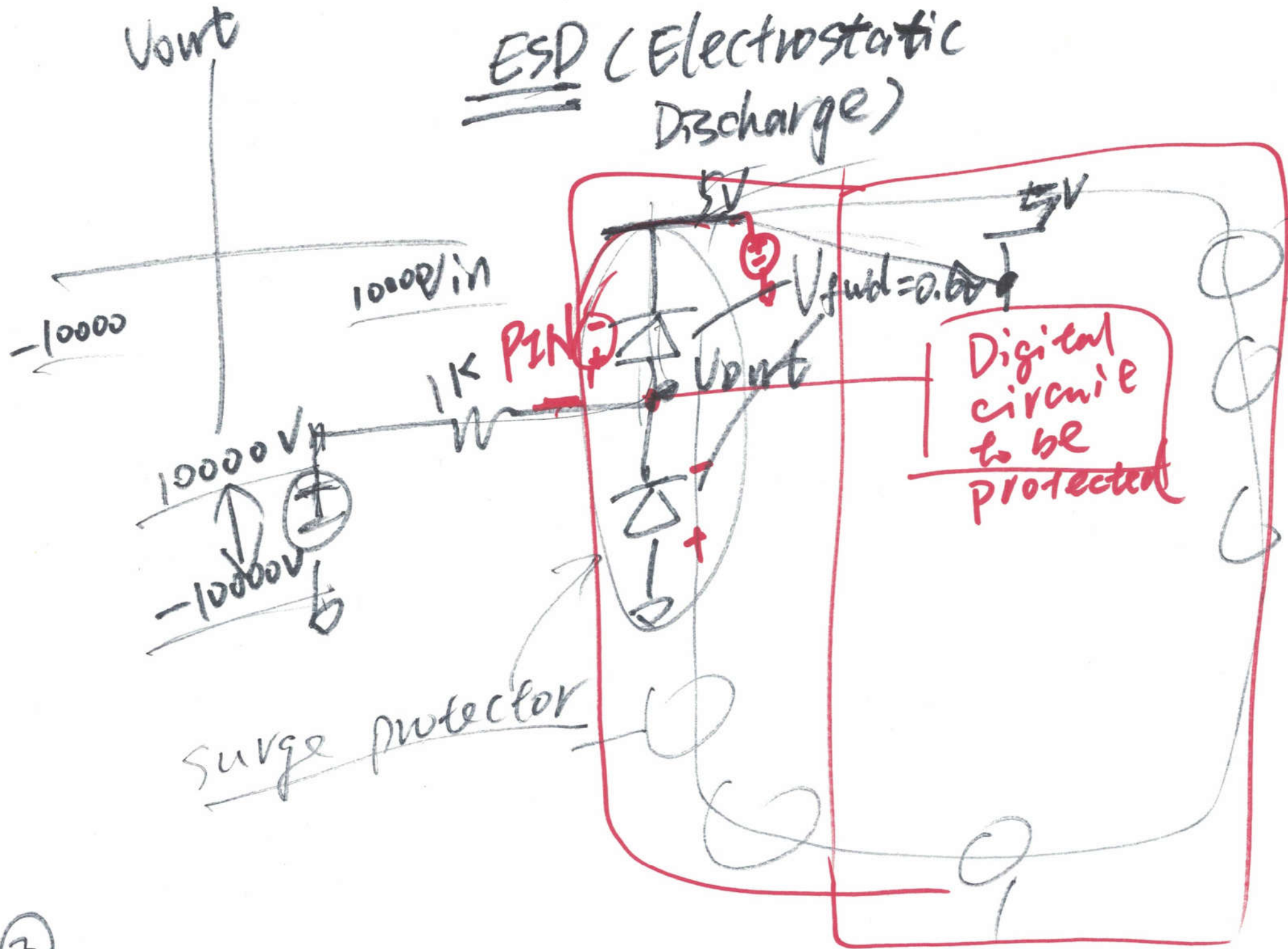
• step ~~param~~ param V_{GS} list





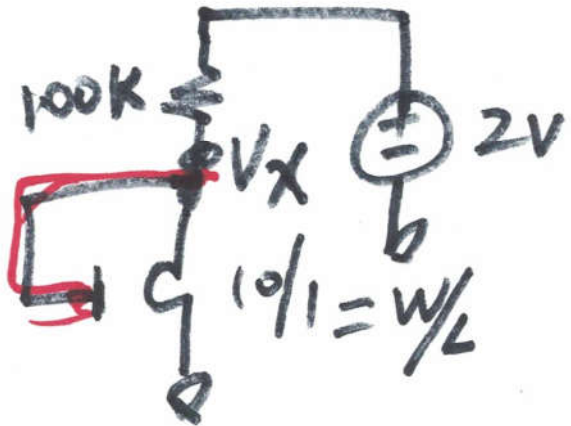
②

ESD (Electrostatic Discharge)

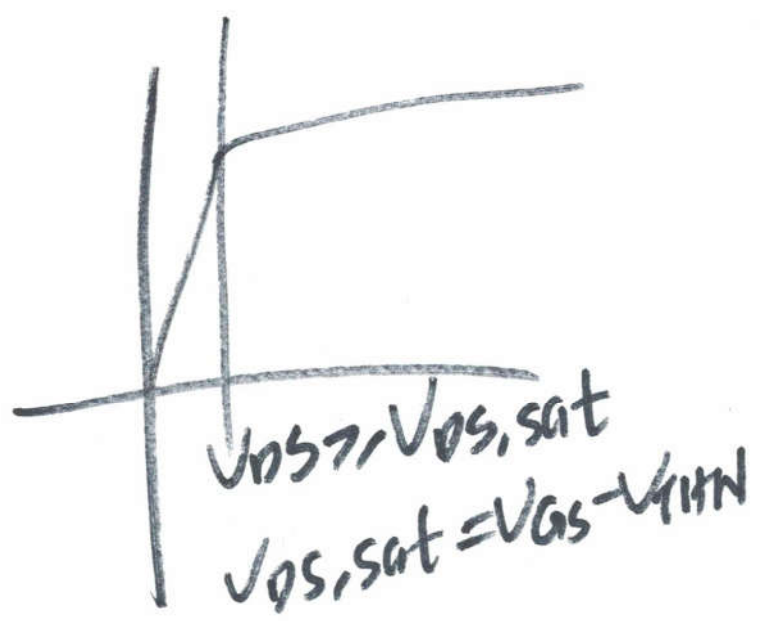


(3)

Example:



$V_{THN} = 0.8V$
 $I_D?$ $V_x?$



$$I_{DS} = \frac{KPN}{2} \frac{W}{L} (V_{GS} - V_{THN})^2$$

$$V_x = 2V - 100k \cdot I_{DS}$$

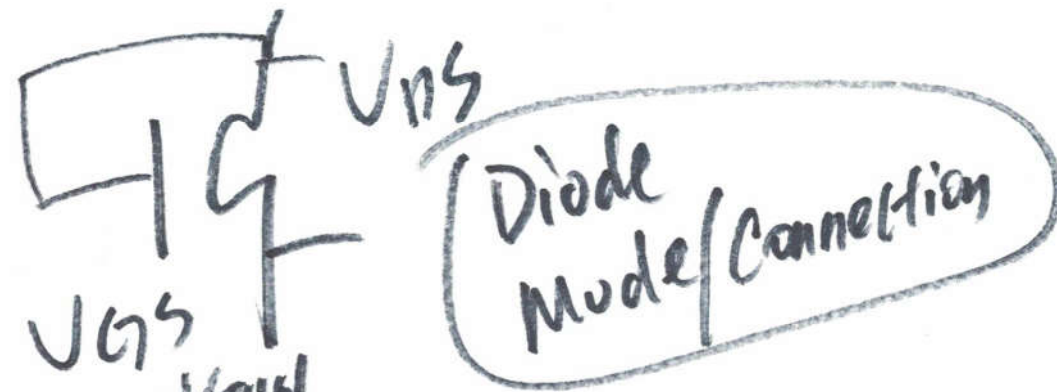
$V_x = V_{GS}$

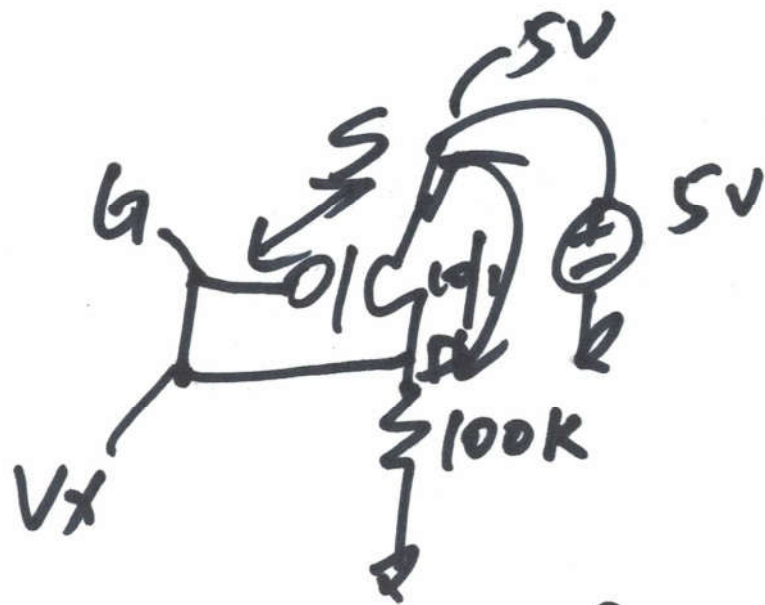
$$KPN = \mu_n \cdot \frac{\epsilon_{ox}}{t_{ox}}$$

mobility of electrons

dielectric constant of the oxide layer

thickness of the oxide layer.





V_x ? I_{SD} ?

$$V_{SD} \rightarrow V_{SD, sat} = V_{GS} - V_{THP}$$

$$I_{SD} = \frac{K_{PP}}{2} \frac{W}{L} (V_{GS} - V_{THP})^2$$

$$V_x = 5V - 100k \cdot I_{SD}$$
~~$$V_{GS} = V_{SD}$$~~

$$V_x = 5 - V_{GS}$$

(5)