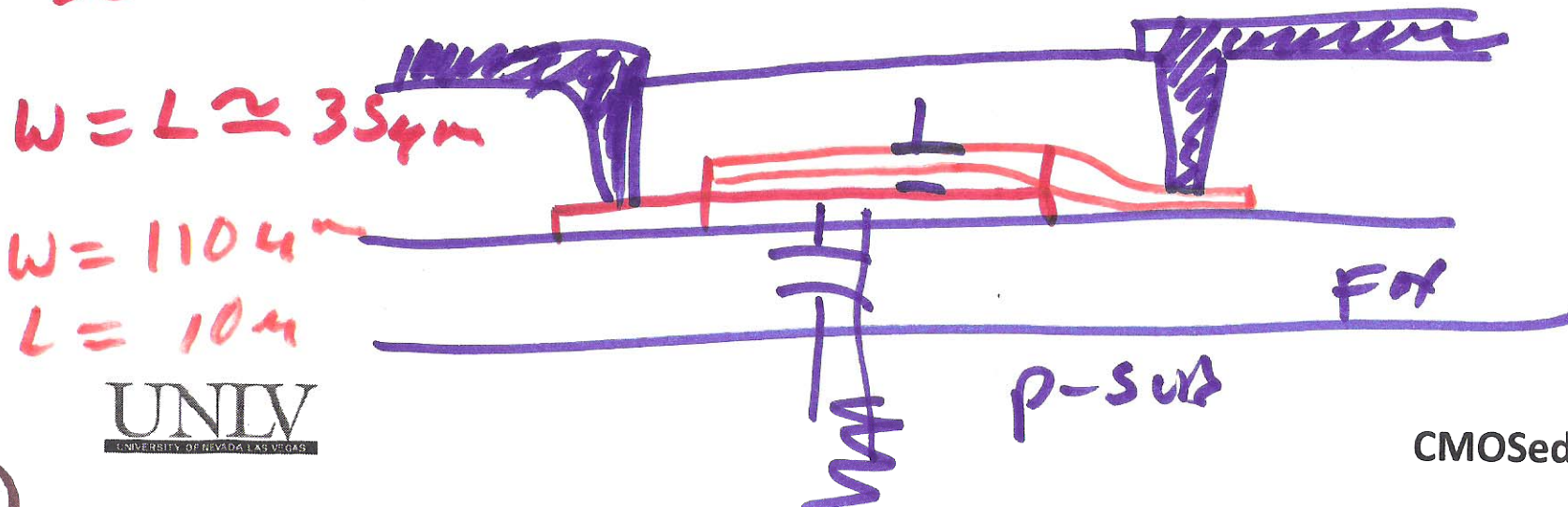
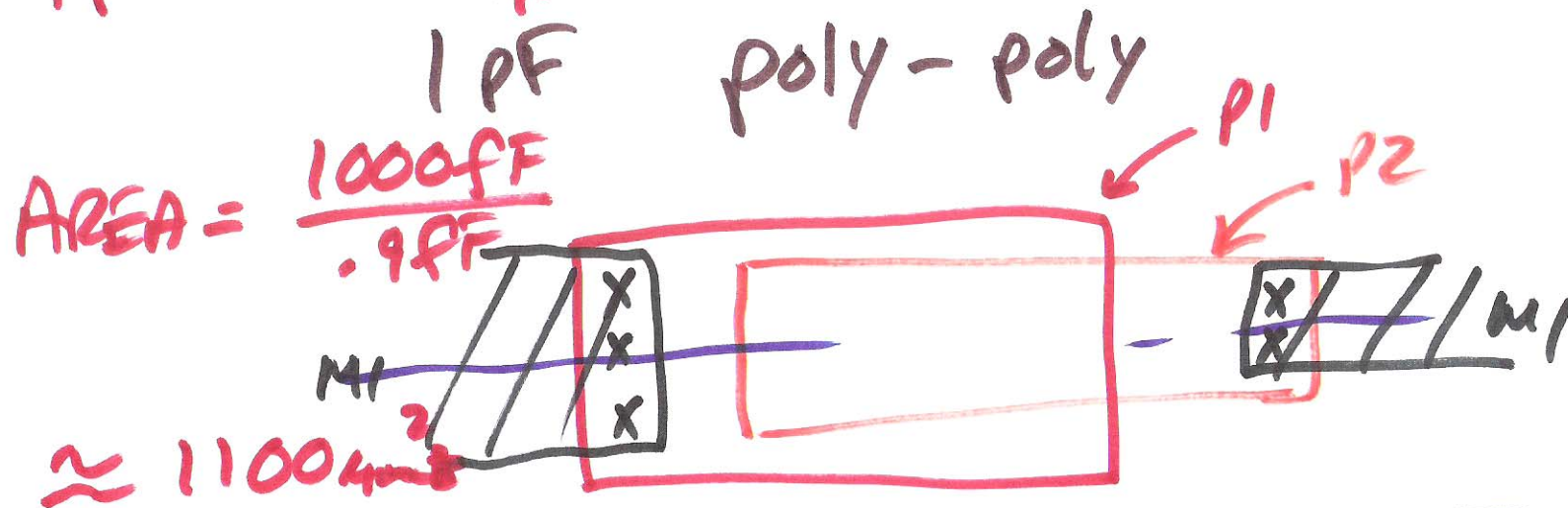
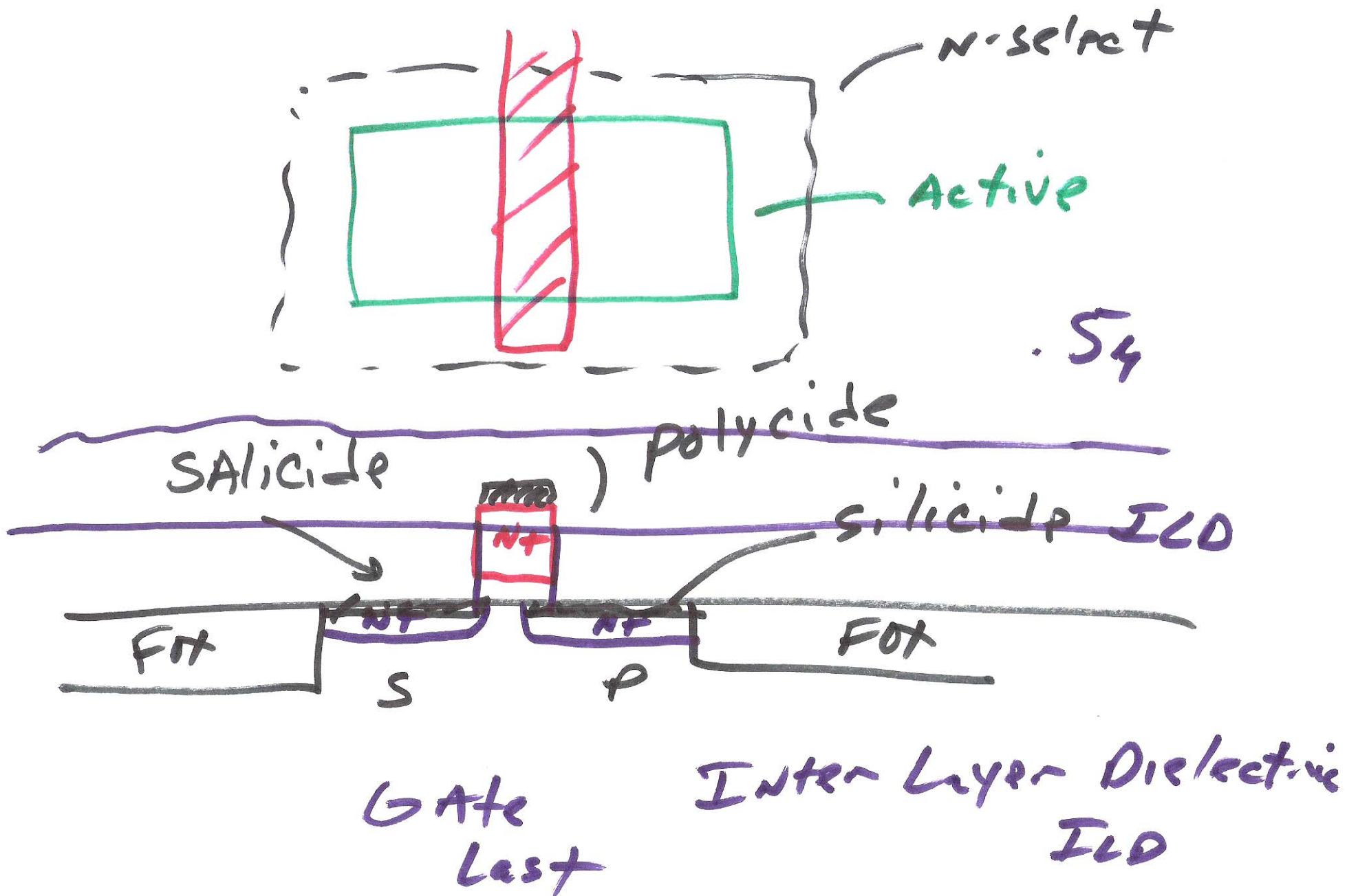


EE 421 / ECG 621

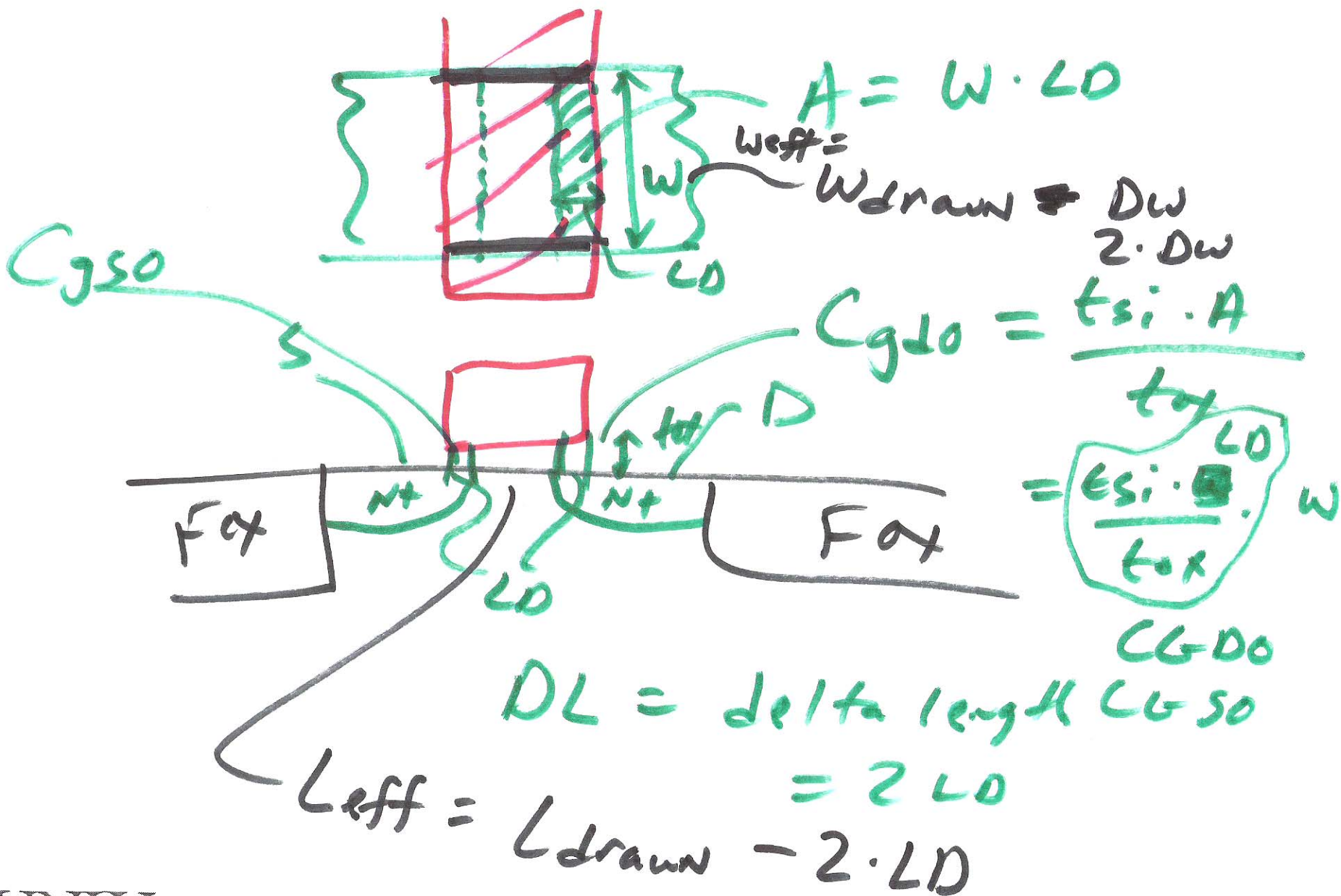
Lecture 10

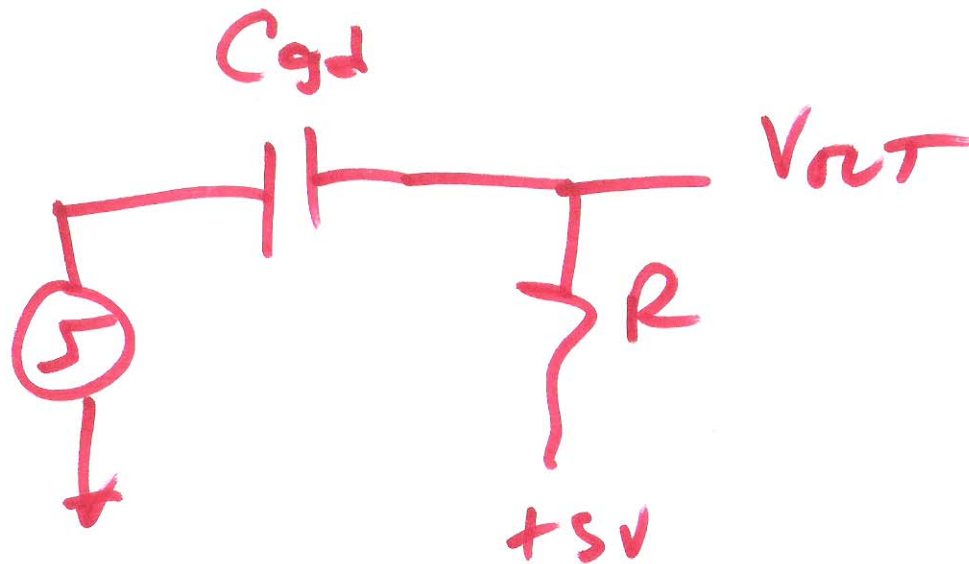
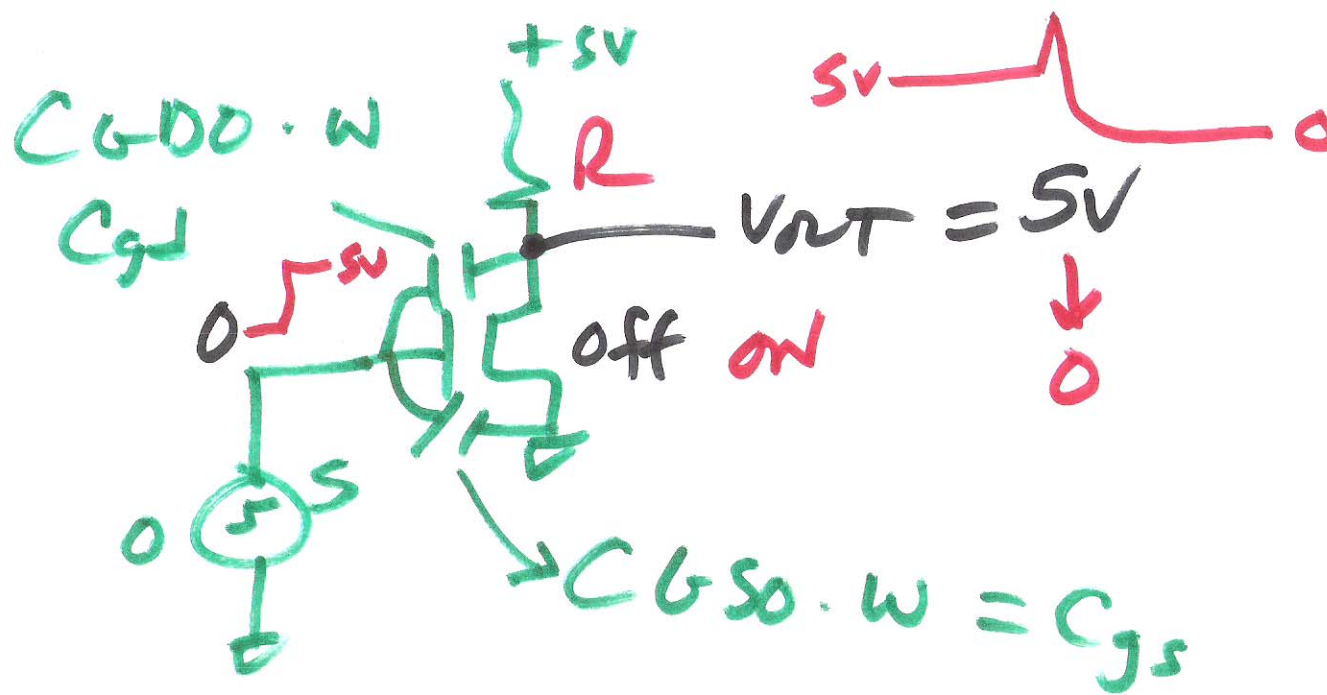
1 pF = $\frac{.900 \text{ fF}}{1 \mu\text{m}^2}$ · Area Sept. 30, 2013

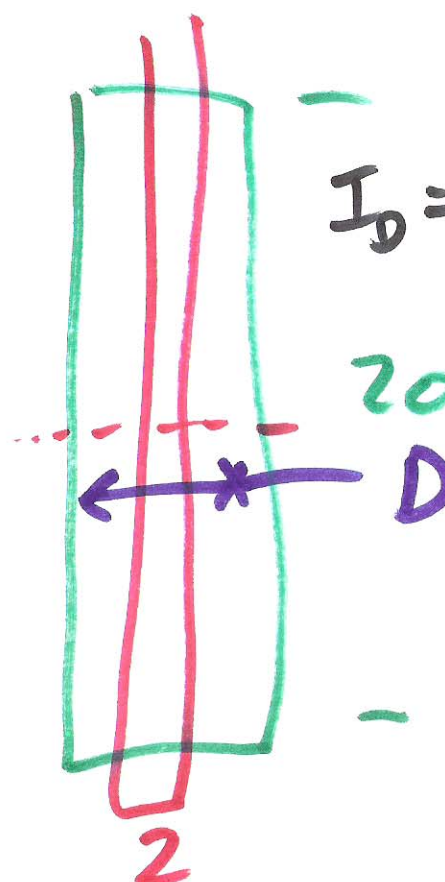




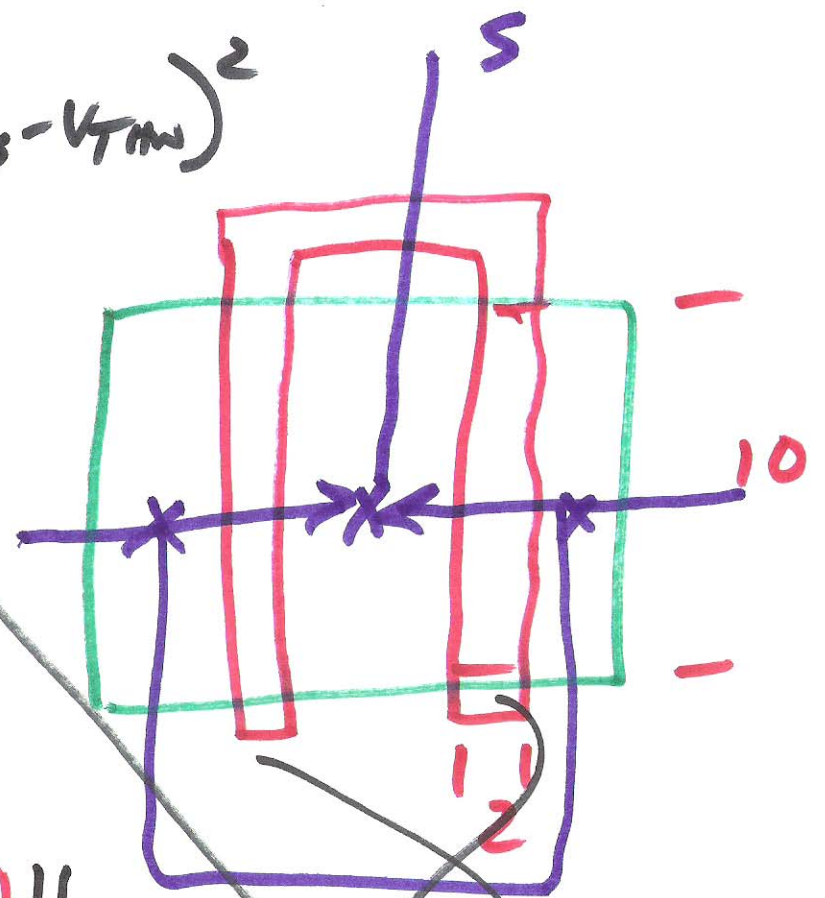
Lateral Diffusion



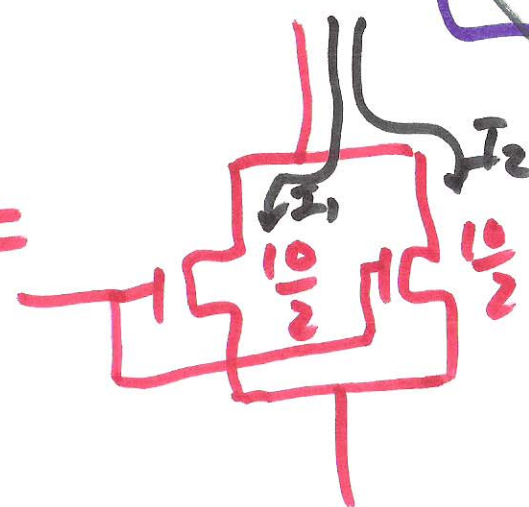




$$I_D = \frac{20}{2} \frac{K_P}{2} (V_{GS} - V_{TH})^2$$



$$1 \frac{20}{2} =$$



$$I_1 = \frac{10}{2} \frac{K_P}{2} ()^2$$

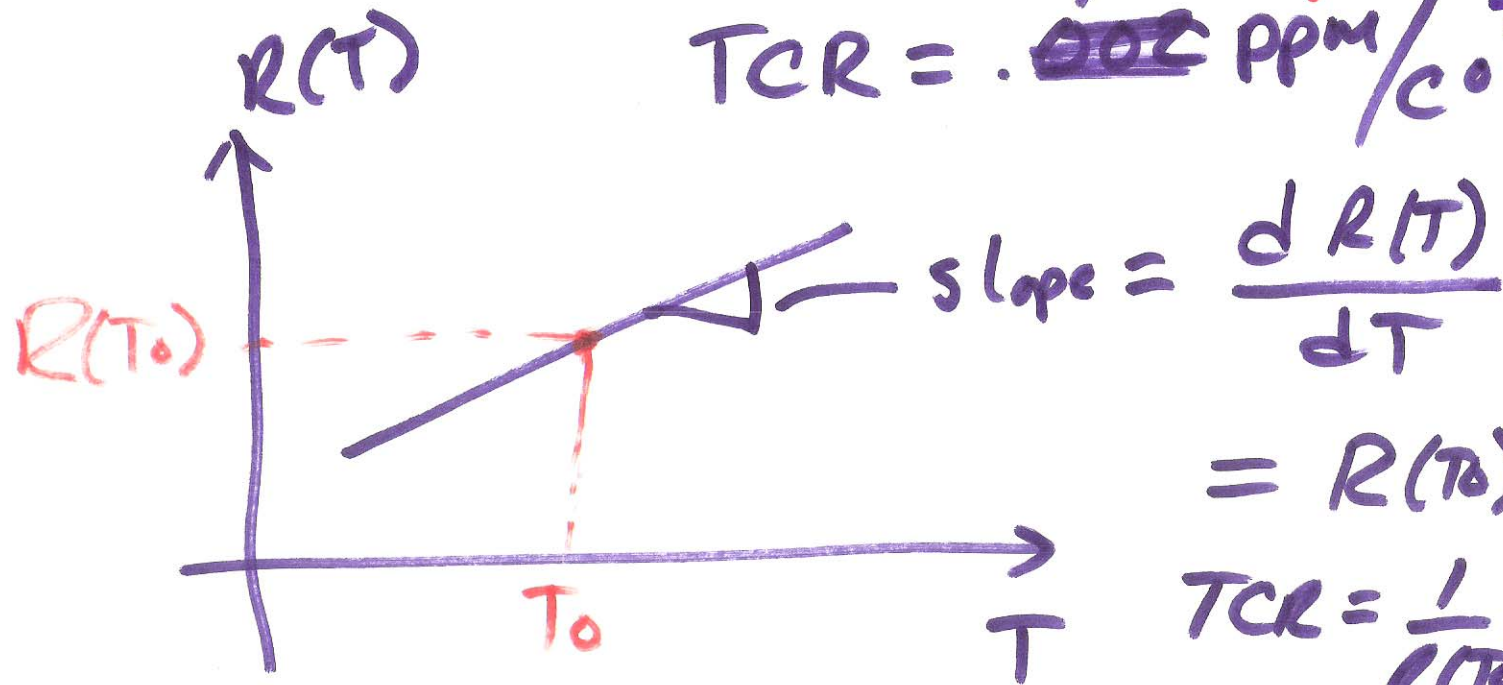
$$I_2 = \frac{10}{2} \frac{K_P}{2} ()^2$$

$$I_1 + I_2$$

5)

Resistance temp Co

$$TCR = \frac{2,000}{10^{-6}} \text{ ppm}/^\circ\text{C} = .002$$



$$= R(T_0) \cdot TCR$$

$$TCR = \frac{1}{R(T_0)} \frac{dR(T)}{dT}$$

$$R(T) = R(T_0) (1 + TCR(T - T_0))$$

Temp Co
of R

N-Well Resistor with

$$TCR = 5,000 \text{ ppm/}^{\circ}\text{C}$$

AT Room temp ^(20K) $R = 10K$

what is R @ 120K

$$R(T) = R(T_0)(1 + TCR(T - T_0))$$

$$10K = 10K(1 + .005(120 - 20))$$

$$10K = 10K(1 + .5) = \underline{\underline{15K}}$$

