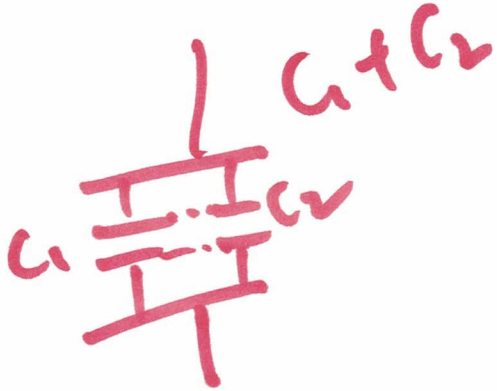
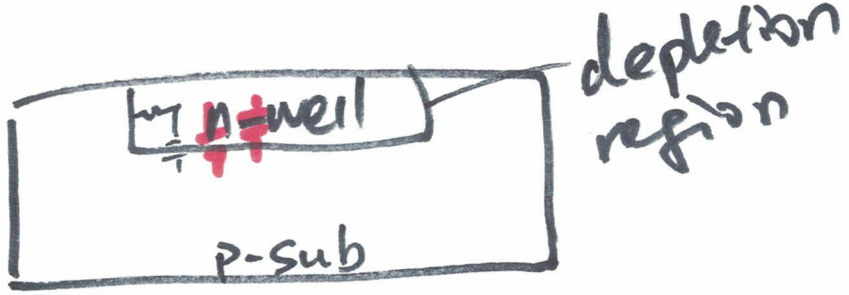
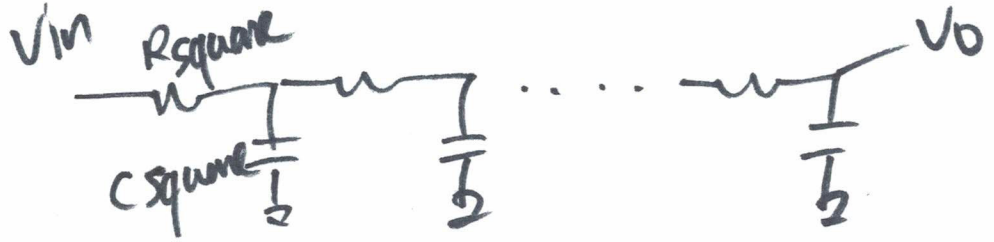
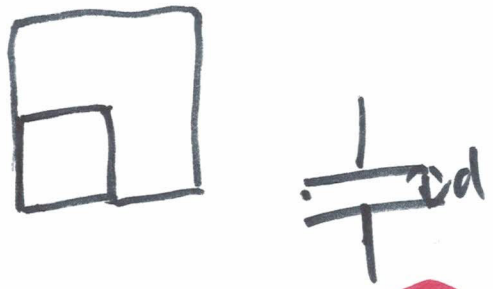
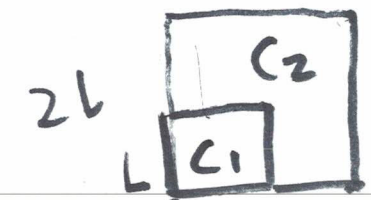










$C = \varepsilon \frac{A}{d}$

$C_2 = 4C_1$

~~$V_o =$~~ $t_d = 0.35 \cdot R_{square} \cdot C_{square} \cdot \frac{L}{W}$ → # of squares

Example: (t_d?) 250kΩ n-well resistor, W=10

L=500, capacitance of a 10x10 square of the n-well ↔ substrate, (5 fF.)

femto 10^-15 pico 10^-12 nano 10^-9

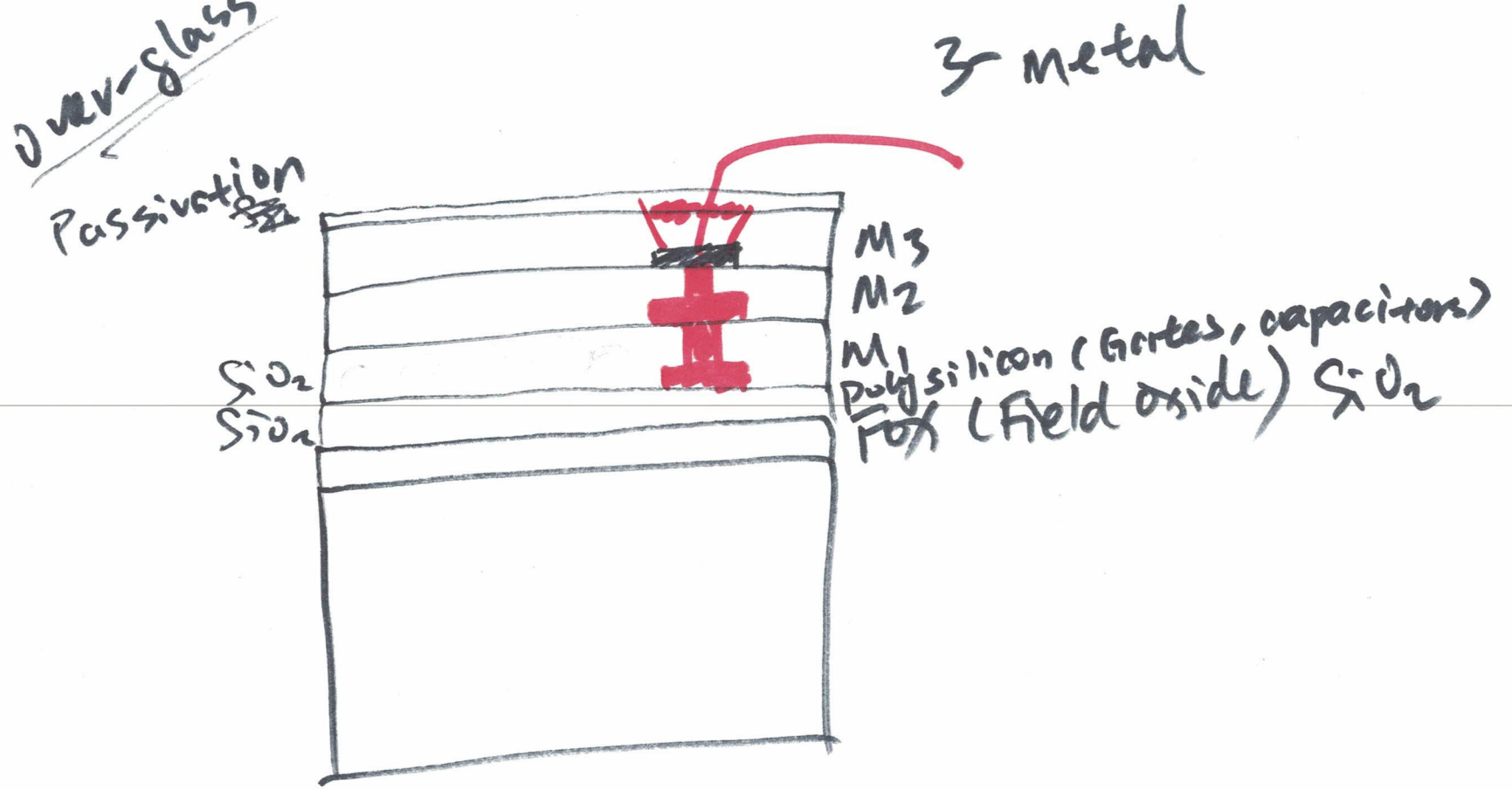
50 squares

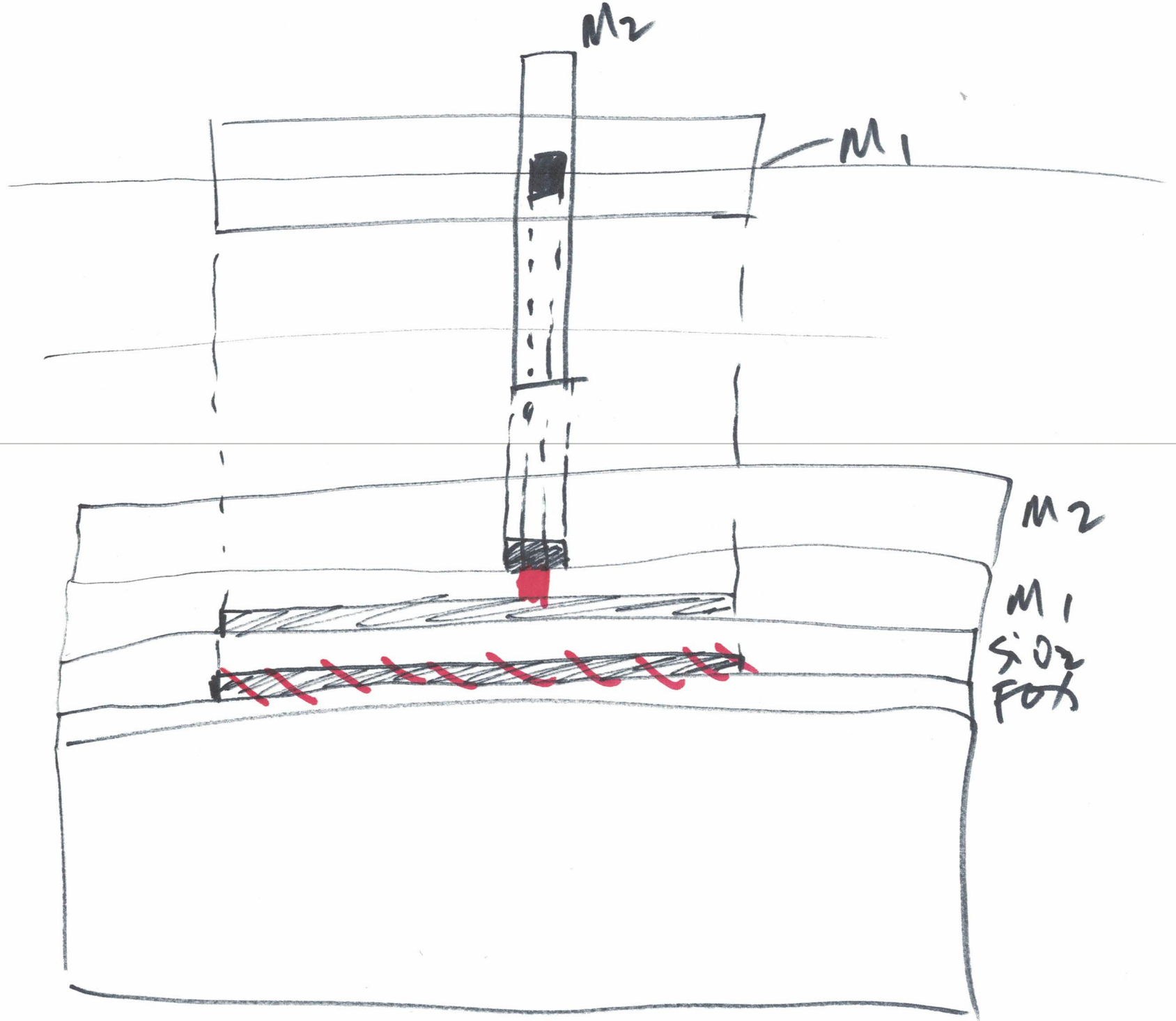
C=250fF

$R_{square} = \frac{250k\Omega}{50} = 5k\Omega$ W=50

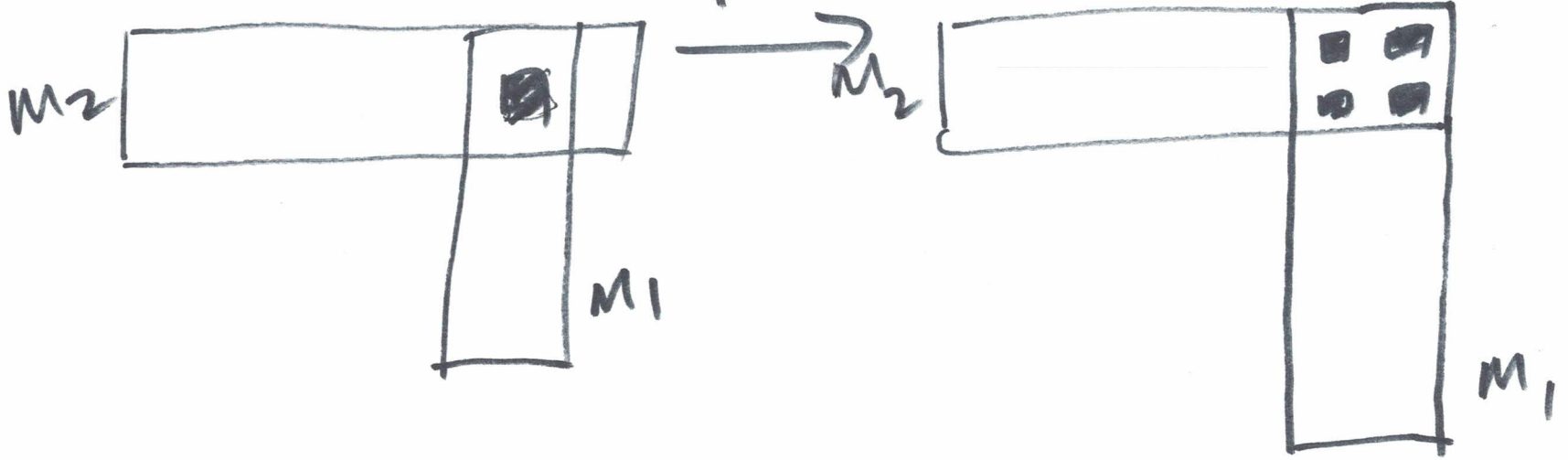
C5 layers — 500nm

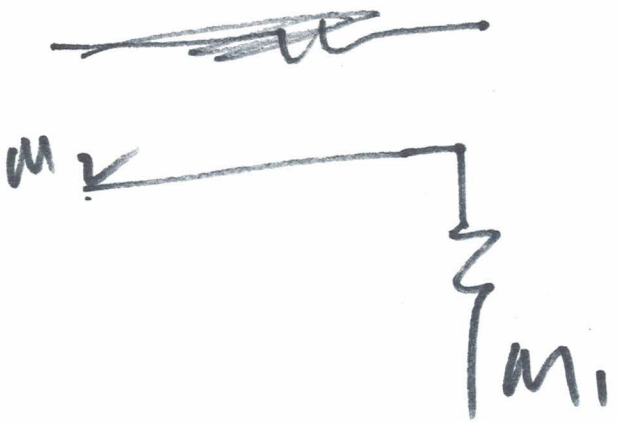
3 metal

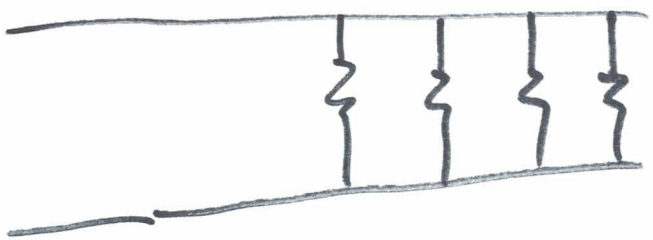



M2
M1
M2
M1
SiO2
FOX

optimized



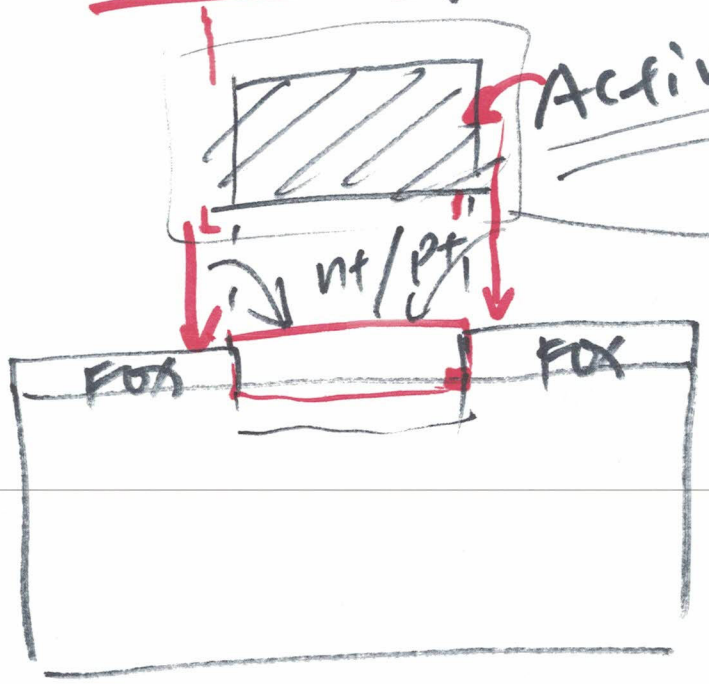




Benefits:

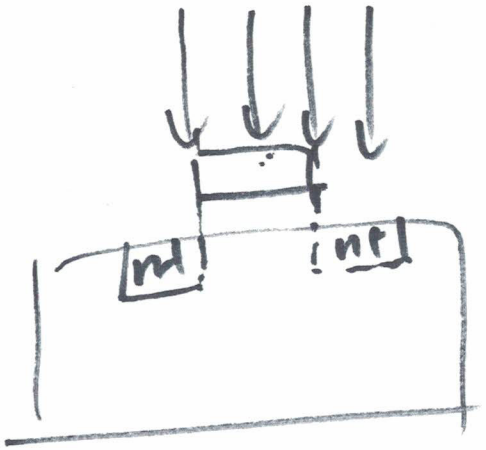
1. lower the resistance
2. lower current for each via
3. Back-up vias.

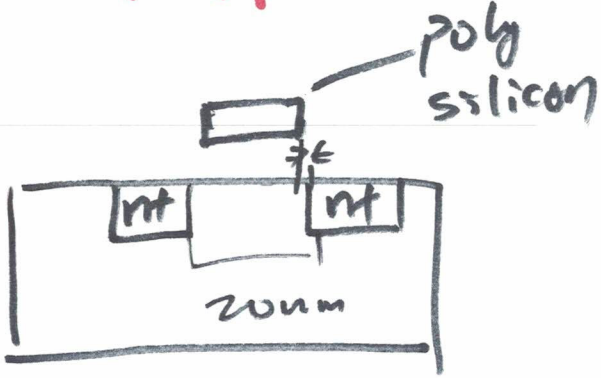
The Active layer → opens the FOX



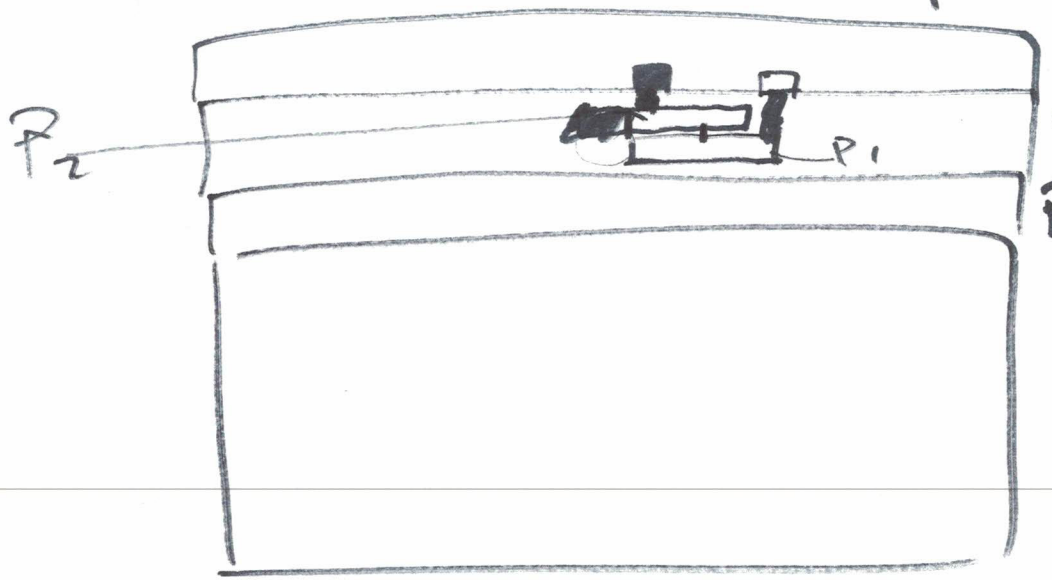
n+ : n-select
p+ : p-select
} → dopes n+/p+ materials

Diffusion





poly	200Ω	square
metal	0.1Ω	square



$$C = \varepsilon \frac{A}{d}$$