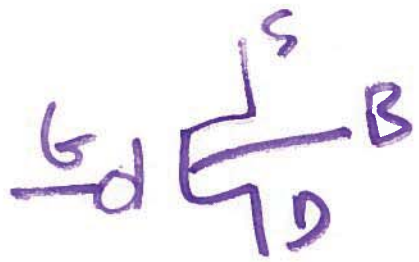


EE 421 / EEL 621

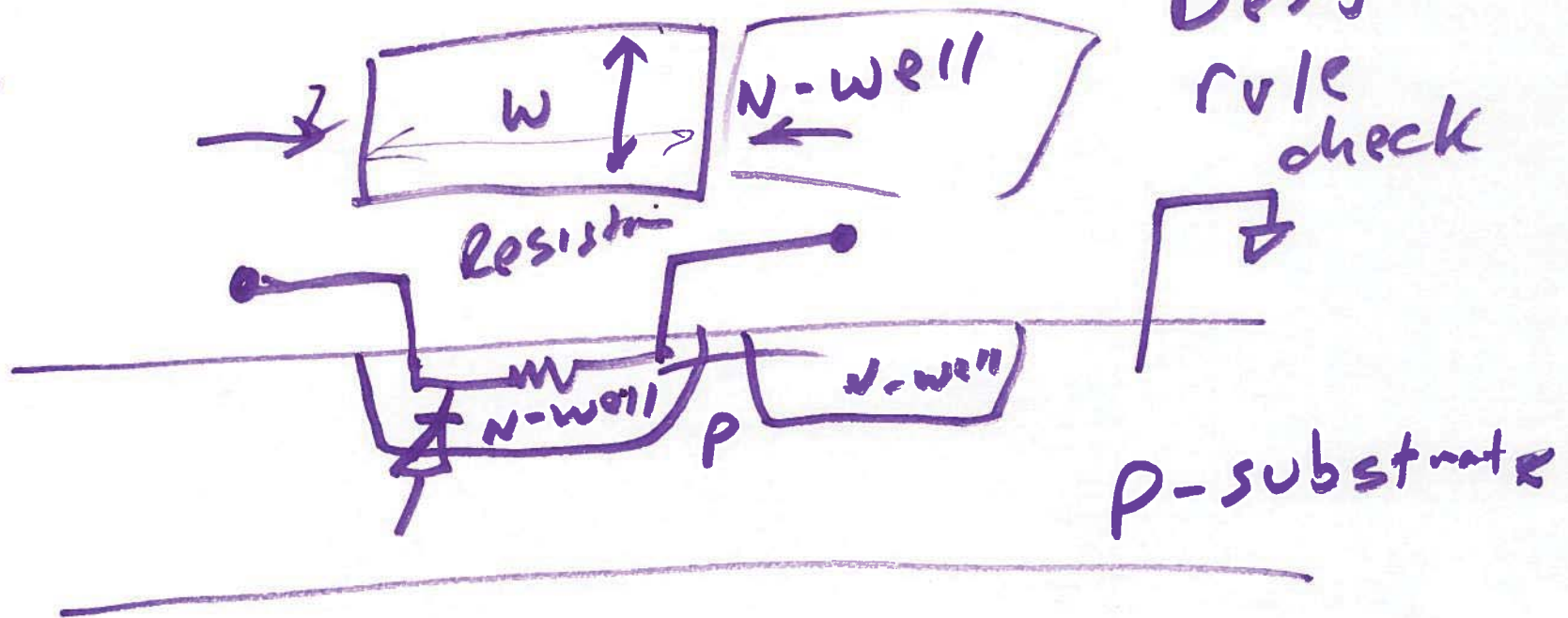
Digital IC Design

Lecture 2

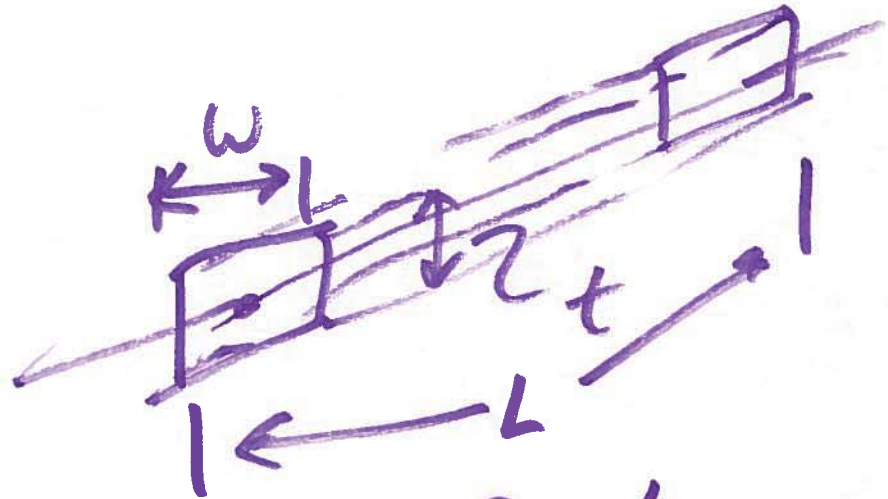
Aug. 30, 2017



- 1) Body of pmos
- 2) resistor ←
- 3) diode



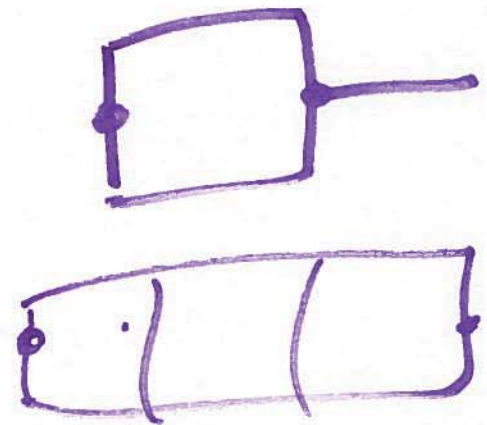
Sheet resistance



$$R = \rho \cdot \frac{L}{w \cdot t}$$

$\rho \cdot \frac{L}{w \cdot t}$ is a constant sheet resistance

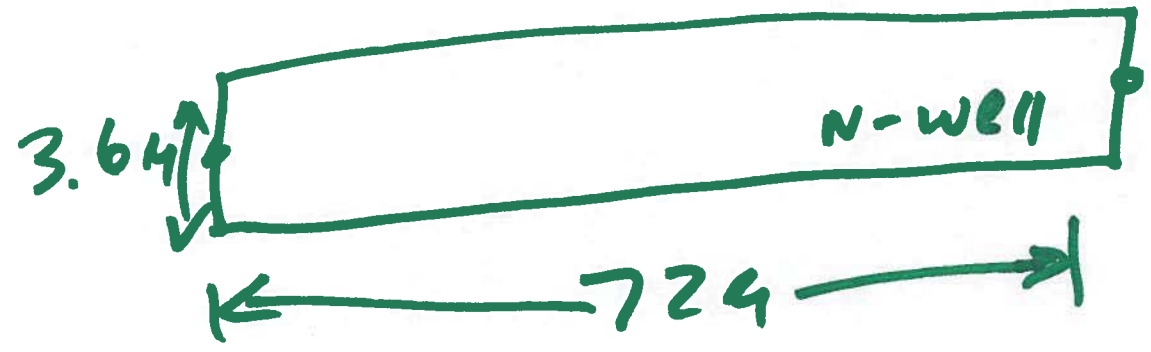
$$\frac{\Omega}{\square}$$



2)

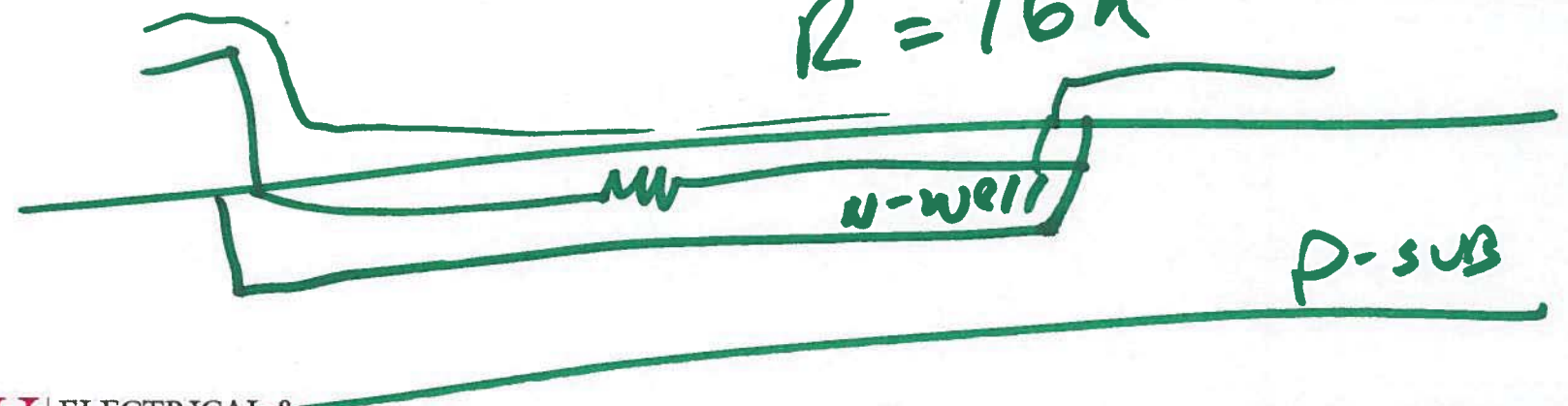
N-well sheet resistance

$$R_{\square} = \frac{800 \Omega}{\square}$$

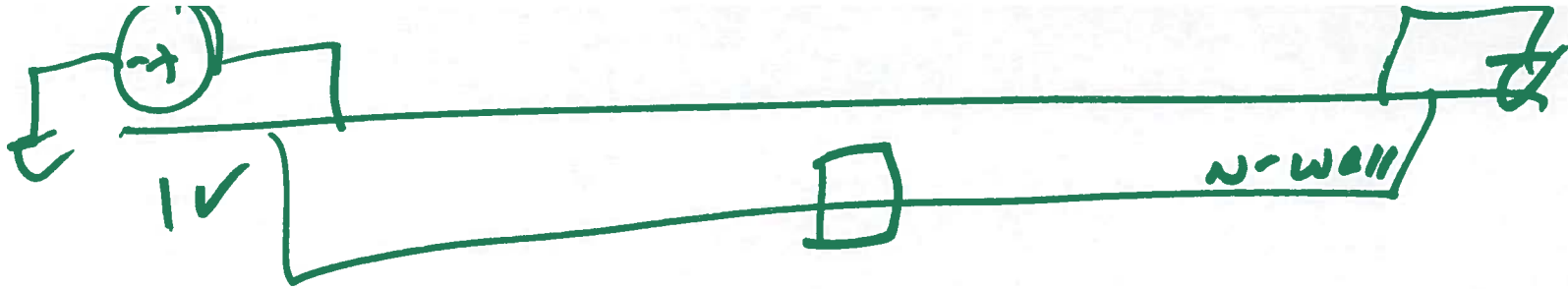


$$R = R_{\square} \cdot \frac{L}{W} = 800 \cdot \frac{72}{3.6}$$

$$R = 16k$$

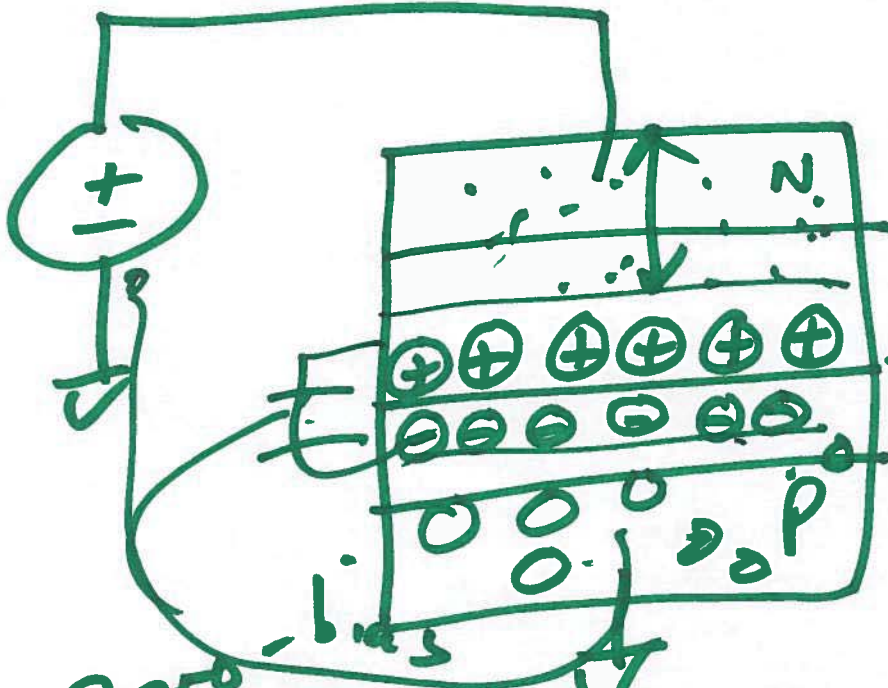


3)



p-sub

$$C = \frac{A}{t} \cdot \epsilon$$

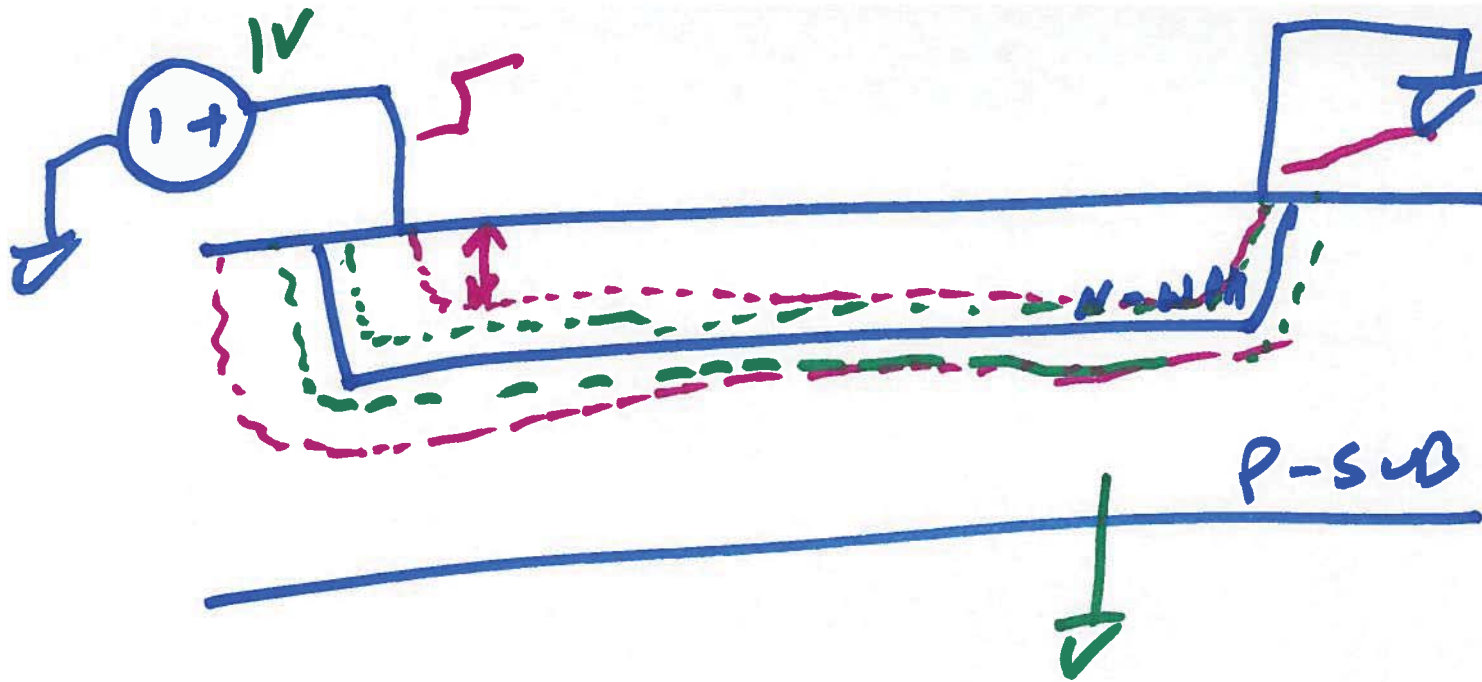


↑ ↑ ↑
CV
SPACE CHARGE
REGION

depletion

zero-bias
depletion CAP.

4)



5)