EE 320
Engineering Electronics I
Feb. 18, 2015
Lecture 10

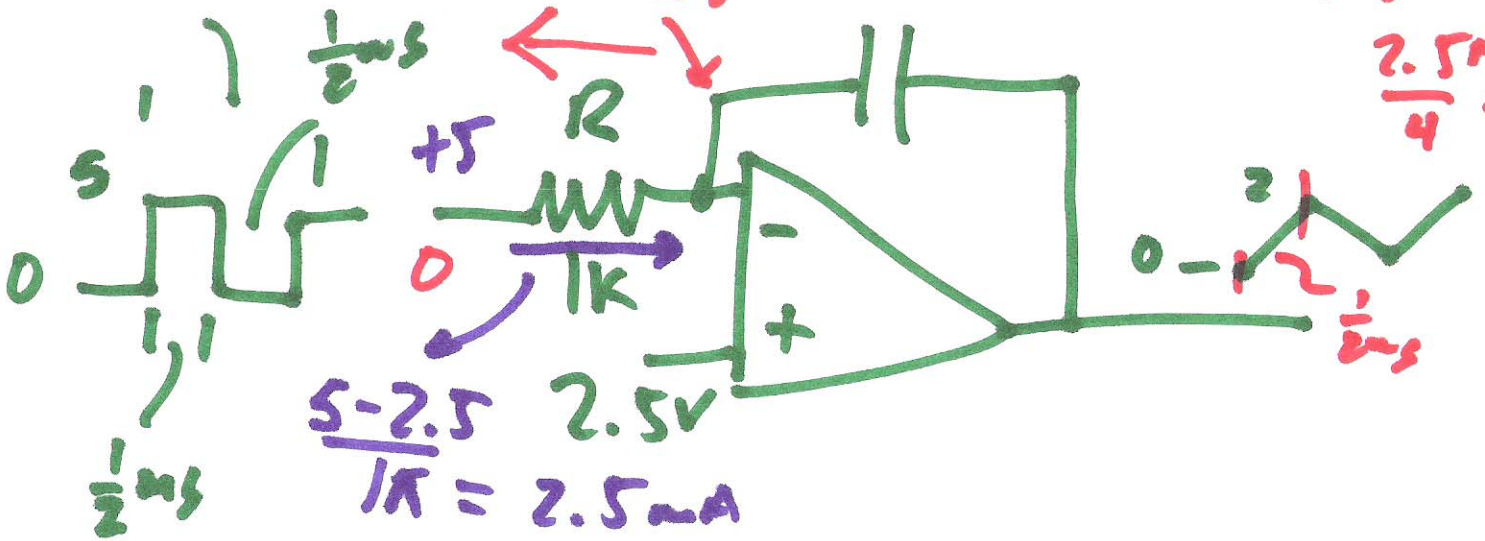
$1ms = \frac{1}{1KHz} = T$

$I = C\frac{dV}{dT} = C\frac{\Delta V}{\Delta t}$

$\frac{2.5-0}{1K\ 2.5} = 2.5mA$

$2.5mA = C \cdot \frac{2}{1/2ms}$

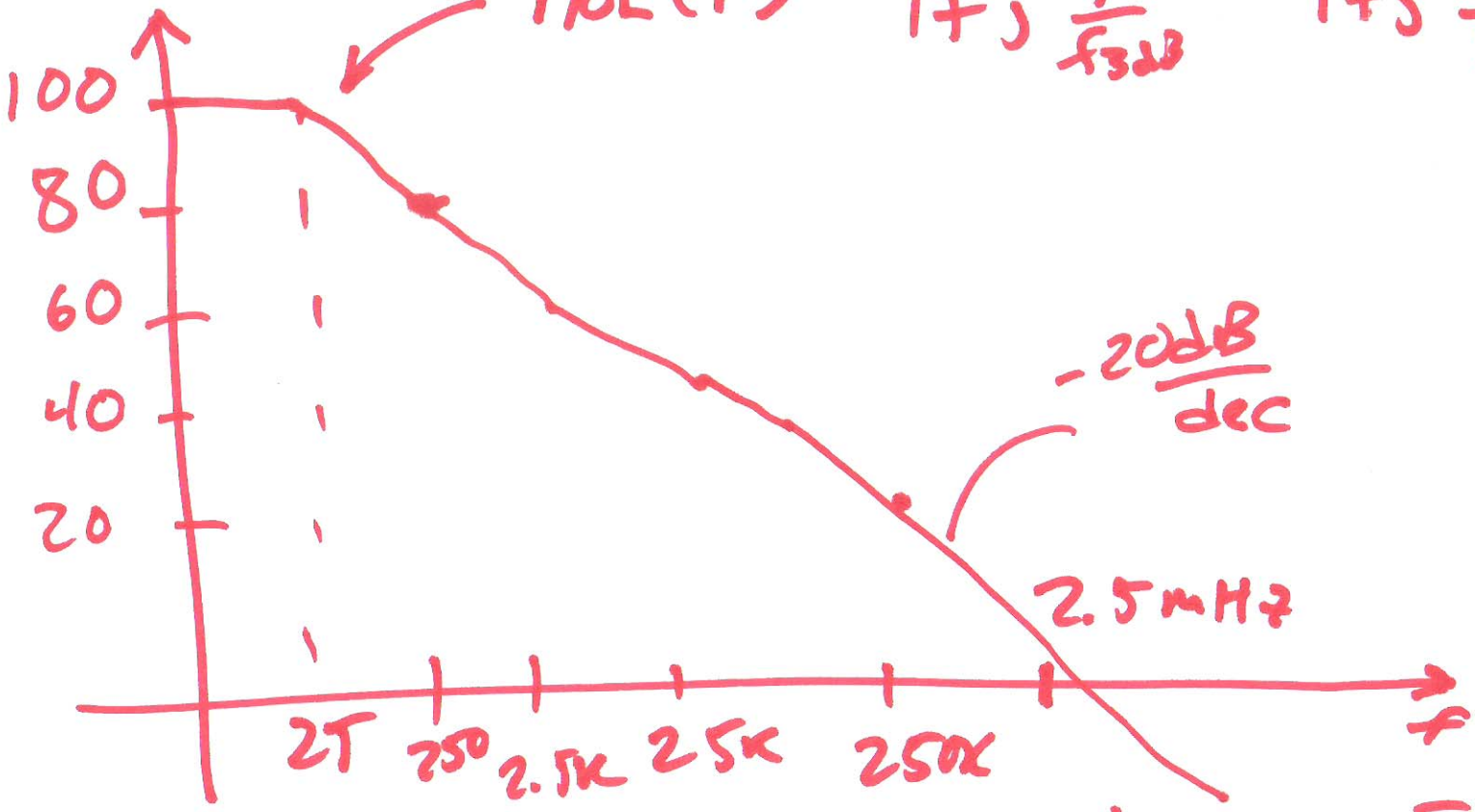
$\frac{2.5M}{4} = C = 0.625\mu F$



$A_{OLDC} = 100\,dB = 100{,}000\ V/V$

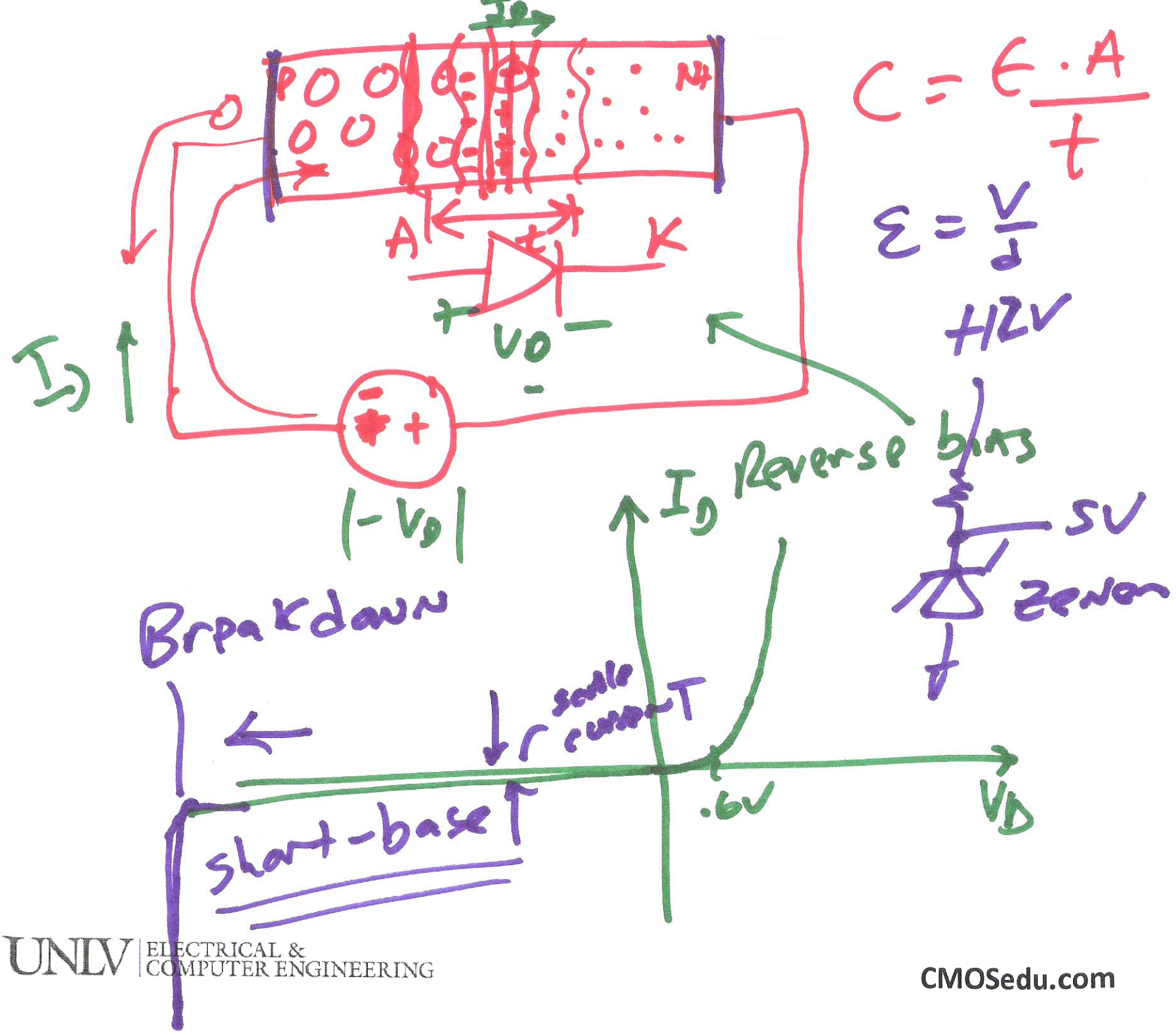
$f_{3dB} = 2.5\ MHz$

$$A_{OL}(f) = \frac{A_{OLDC}}{1 + j\frac{f}{f_{3dB}}} = \frac{100k}{1 + j\frac{f}{25}}$$



$$f = \frac{1}{2\pi RC} = \left| \begin{array}{l} \frac{1}{2\pi \cdot C} = 25 \\ R = 1 \end{array} \right. \quad C = \frac{1}{2\pi \cdot 25}$$

$$C = 6.37\,mF$$



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

$$\mathcal{E} = \frac{V}{d}$$

Forward bias