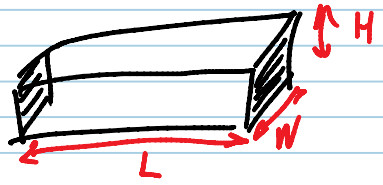
Dis 2, Mon Sep 10

Monday, September 10, 2012
4:04 PM

Sheet Resistance



$$R = \rho \frac{L}{WH} = \left(\frac{\rho}{H}\right)\frac{L}{W}$$

Sheet Resistance

Si Wafer

$$R = R_{\square}\frac{L}{W}$$

$$\rho = (n\mu q)^{-1}$$

n: dopant concentration atom/cm³

$H_S = 60\mu m$

$H = 2\mu m$

$$R_{\square,Slab} = R_{\square,sb}\frac{H}{H_S} = \frac{R_{\square,sb}}{30}$$

$$y(x) = Ae^{i\alpha x} + Be^{-i\alpha x} + Ce^{\alpha x} + De^{-\alpha x}$$

$$y(x) = A\cos\alpha x + B\sin\alpha x + C\sinh\alpha x + D\sinh\alpha x$$

$$y(0) = A + C = 0 \qquad C = -A$$

$$\frac{\partial y}{\partial x}(L) = B + D = 0 \qquad D = -B$$

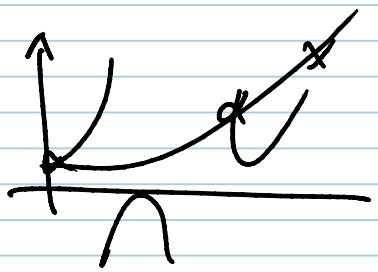
$$y(x) = A[\cos\alpha x - \cosh\alpha x] + B[\sin\alpha x - \sinh\alpha x]$$

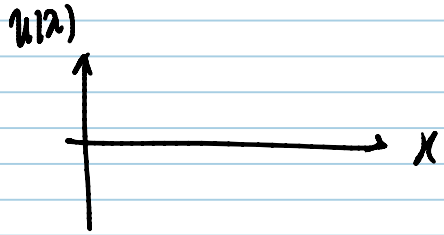
$$y(L) = A[\cos\alpha L - \cosh\alpha L] + B[\sin\alpha L - \sinh\alpha L] = 0$$

$$\frac{\partial u}{\partial x} = A\left[-\alpha \sin\alpha L - \alpha \sinh\alpha L\right] + B\left[\alpha \cos\alpha L - \alpha \cosh\alpha L\right] = 0$$

$$\begin{bmatrix} \quad \end{bmatrix}\begin{bmatrix} A \\ B \end{bmatrix} = 0 \qquad \cos\alpha L \cosh\alpha L =$$

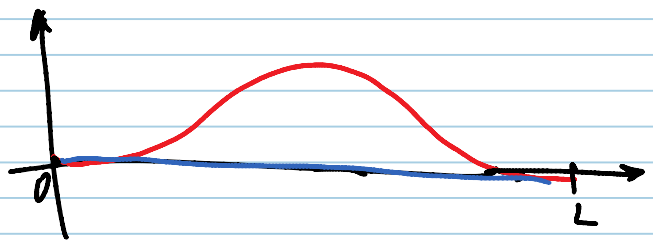
$$\cosh\alpha L = \frac{1}{\cos\alpha L}$$

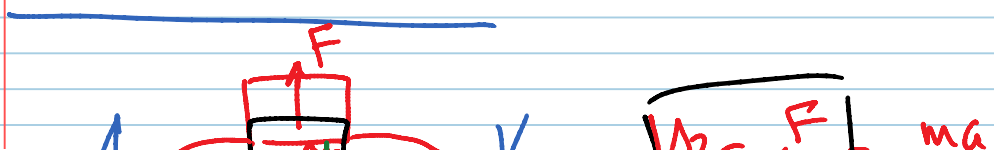


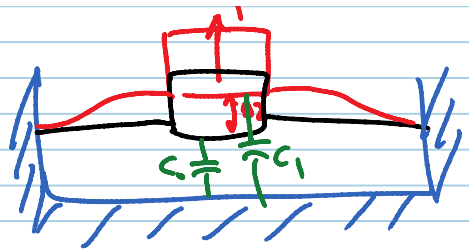


$$\begin{vmatrix} \quad & \quad \\ \quad & \quad \end{vmatrix} = 0 \qquad A(\quad) + B(\quad) = 0$$

$$u(x) = A\left[\quad\right]$$

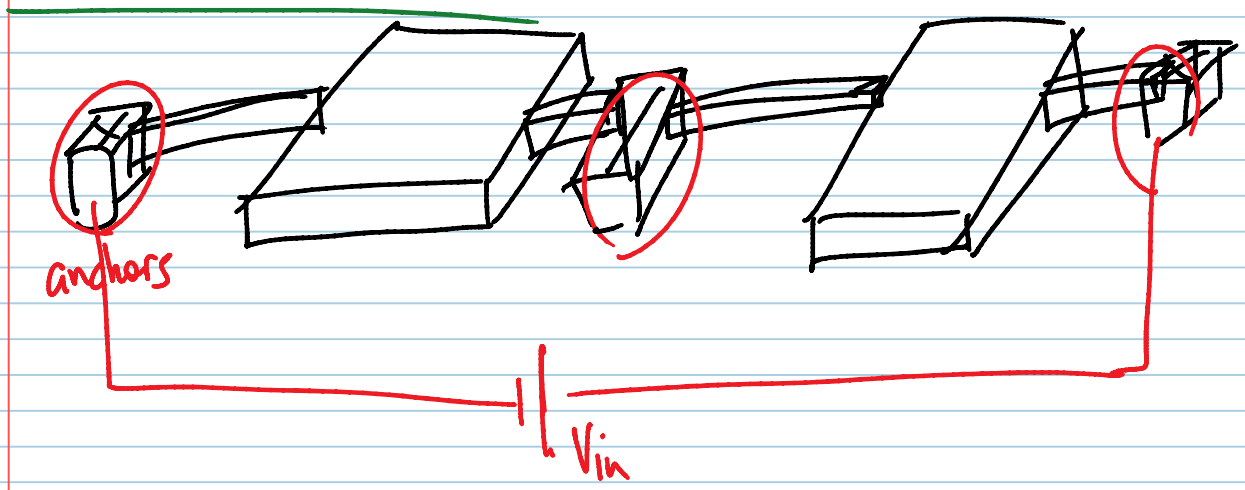


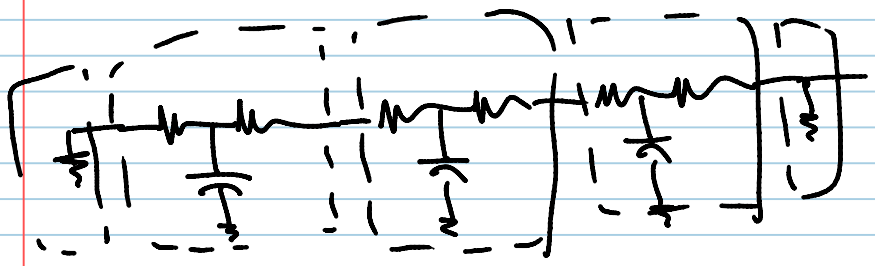




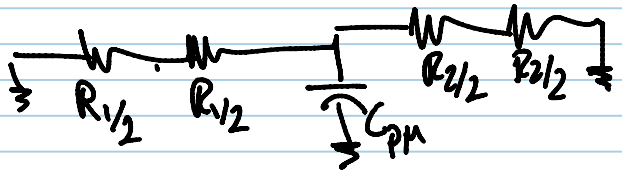
$$\Delta z = \frac{F}{k_z} = \frac{ma}{k_z}$$

$$\Delta C = C_1 - C_0$$





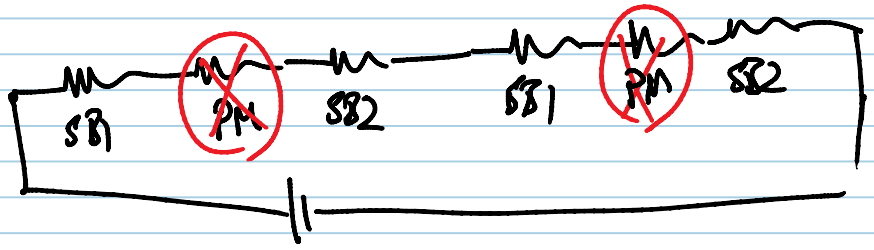
Thermal Circuit



$$\tau = C_{PM} * \left[R_1 \| R_2 \right]$$

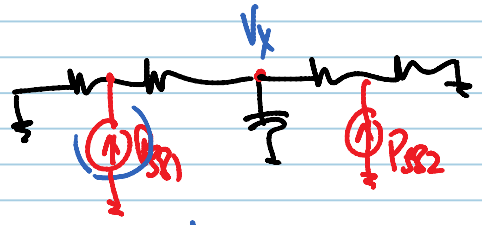
$$v_2 = Ae^{-t/\tau} + B$$

Electrical Circuit



$$I = V_{in} / \sum R = \frac{V_{in}}{2(R_{SB1} + R_{SB2})}$$

$P_{SB1} = I^2 R_{SB1}$ $\quad P_{SB2} = \cdots$ $\quad P_{PM} =$ neglect



$V_X = \frac{}{} P_{SB1} + \frac{}{} + P_{SB2}$

$v_x = A e^{-t/\tau} + B$ $\quad A + B = 0$ $\quad B = V_X$

$v_x = V_X (1 - e^{-t/\tau})$ $\quad T_x = V_X (1 - e^{-t/\tau}) + T_o$