

$$B = \frac{\partial f}{\partial \tilde{u}} \bigg|_{\substack{x=\bar{x}, \\ u=\bar{u}}} = \begin{bmatrix} \frac{\partial f_1}{\partial \tilde{a}} & \frac{\partial f_1}{\partial \tilde{v}_g} \\ \frac{\partial f_2}{\partial \tilde{a}} & \frac{\partial f_2}{\partial \tilde{v}_g} \end{bmatrix} =$$

$$B = \begin{bmatrix} \frac{1}{L}(V_g - IR_{on} + \frac{V}{n}) & \frac{D}{L} \\ \frac{\cancel{-V}}{\cancel{RC}} - \frac{1}{nC} + \frac{\cancel{V}}{\cancel{RC}} & 0 \end{bmatrix}_{n=2} = \begin{bmatrix} \frac{1}{L}(V_g - IR_{on} + \frac{V}{n}) & \frac{D}{L} \\ \frac{-1}{nC} & 0 \end{bmatrix}$$

$$B = \begin{bmatrix} \frac{1}{L}(V_g - IR_{on} + \frac{V}{2}) & \frac{D}{L} \\ \frac{-1}{2C} & 0 \end{bmatrix}$$