

$$i_D^* = \begin{cases} K' \left(\frac{W}{L}\right) \left(v_{ov}v_{DS} - \frac{1}{2}v_{DS}^2\right), & \text{triode} \\ \frac{1}{2}K' \left(\frac{W}{L}\right) v_{ov}^2, & \text{saturation} \end{cases}$$

$$i_D = i_D^* (1 + \lambda v_{DS})$$