

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