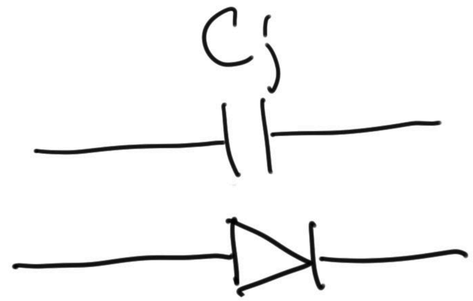
negative ions

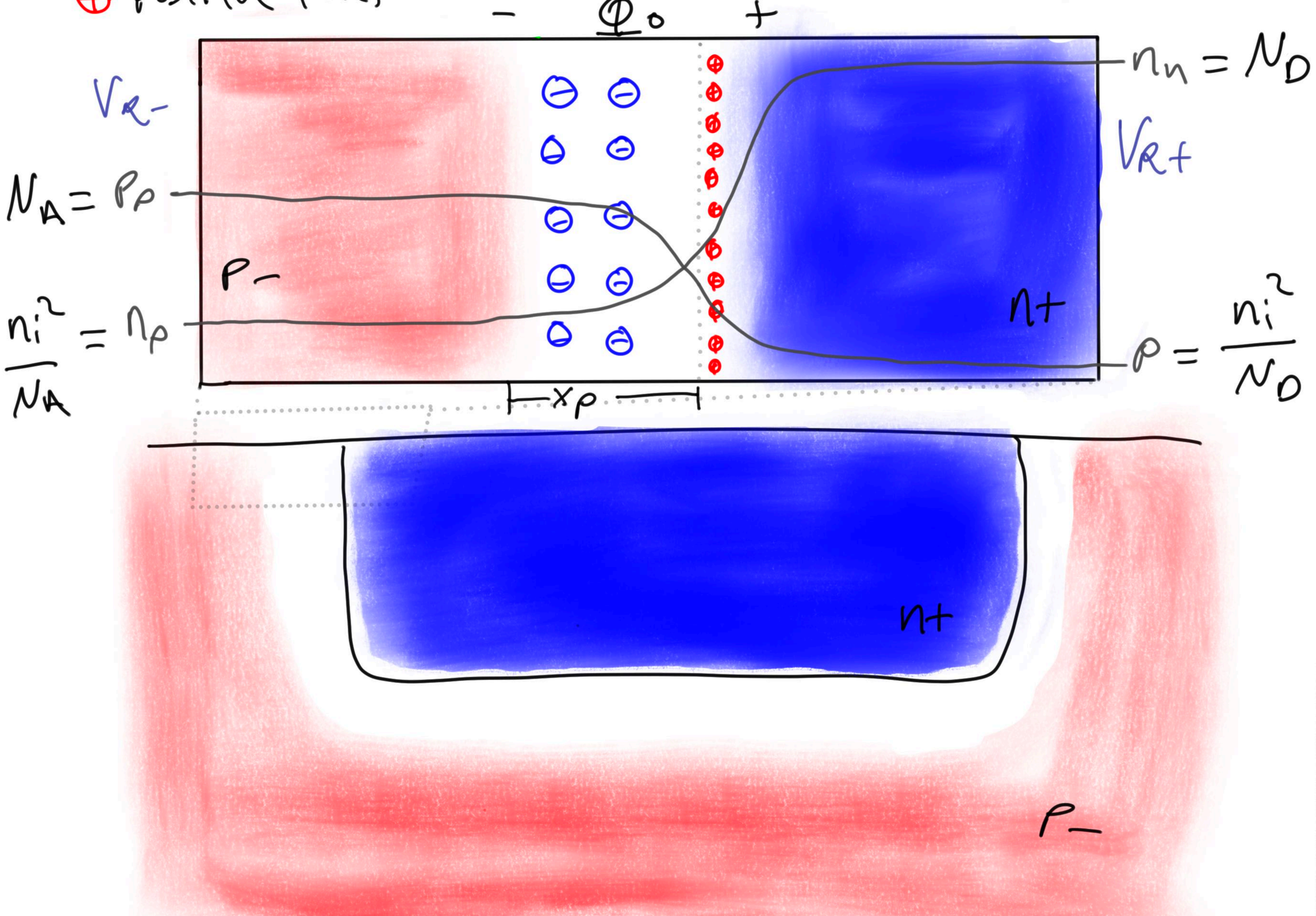
electron cons.

hole cons

positive ions



$$\frac{n_n}{n_p} = e^{\frac{q\Phi_0}{kT}}$$



$$N_D >> N_A$$

$$x_p = \sqrt{\frac{2K_S\varepsilon_0}{qN_A}(\Phi_0 + V_R)}$$

$$C_j = \frac{C_{j0}}{\sqrt{1 + \frac{V_R}{\Phi_0}}}$$

$$C_{j0} = \sqrt{\frac{qK_S\varepsilon_0 N_A}{2\Phi_0}}$$