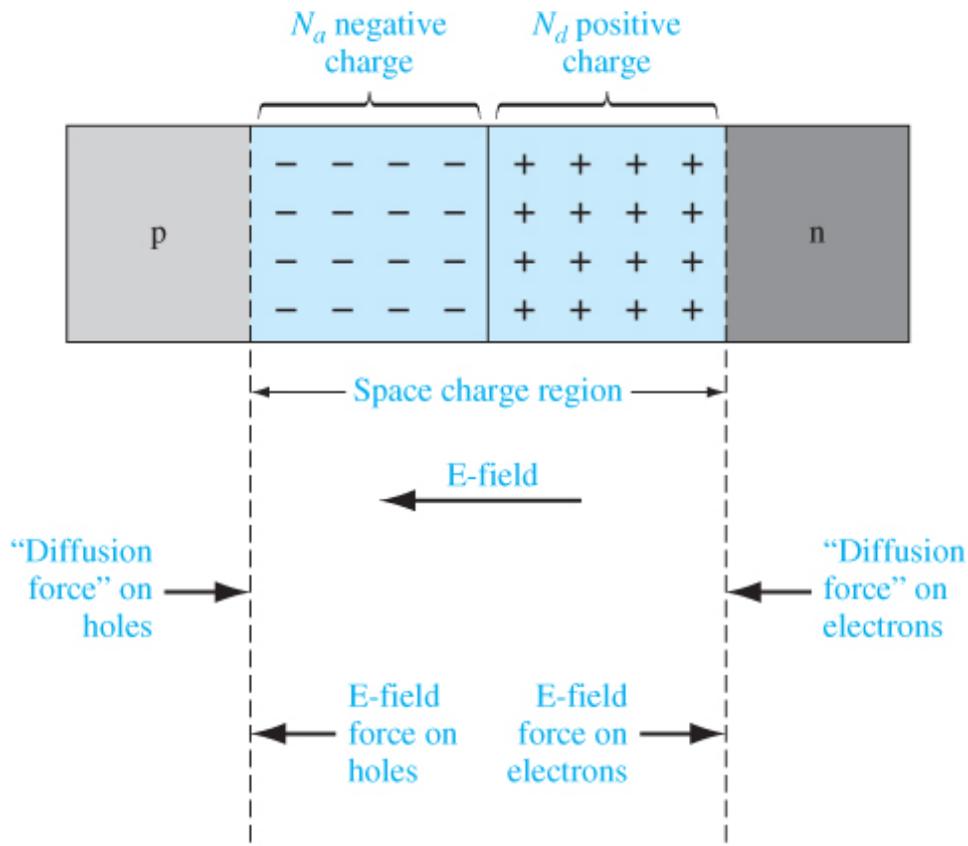


From *Semiconductor Physics and Devices: Basic Principles* (4th Edition), Donald A. Neamen, McGraw Hill, 2012, ISBN 978-0-07-352958-5.



**Figure 7.2** | The space charge region, the electric field, and the forces acting on the charged carriers.

- At equilibrium, the space charge region (AKA depletion region) has very few **free** charge carriers (both electrons and holes) due to recombination and the Coulomb force from the induced electric field pushing them out.
- Without free charges, the space charge/depletion region acts like an insulator.