The p-n junction diode

It is possible to manufacture a single crystal of silicon in which one part is p-type and the other part is n-type. Connections are made to the p-type and n-type regions to produce a p-n junction. The important thing about this type of junction is that it only conducts in one direction.

The diagram shows the p-n junction, the diode symbol and the direction in which the current can flow.