

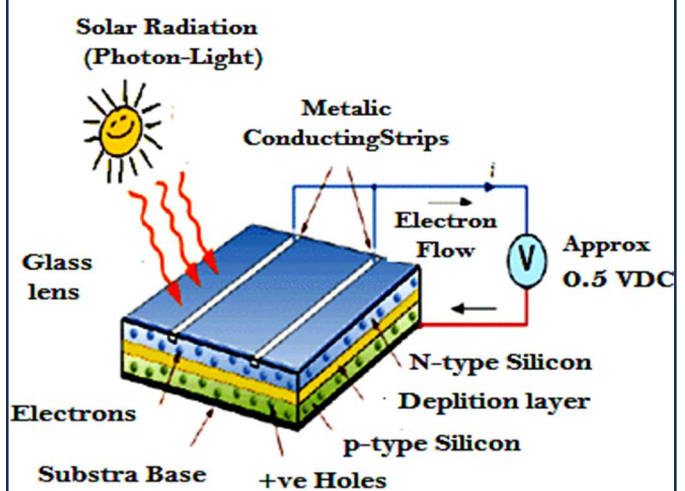
WHAT IS A SOLAR CELL?

A **solar cell** (also known as a **photovoltaic cell** or **PV cell**) is defined as an electrical device that **converts light energy into electrical energy** through the photovoltaic effect. A solar cell is basically a p-n junction diode. Solar cells are a form of photoelectric cell, defined as a device whose electrical characteristics – such as current, voltage, or resistance – vary when exposed to light.

Individual solar cells can be combined to form **modules** commonly known as **solar panels**. The common single junction silicon solar cell can produce a maximum open-circuit voltage of approximately **0.5 to 0.6 volts**. By itself this isn't much – but remember these solar cells are tiny. When combined into a large solar panel, considerable amounts of renewable energy can be generated.

Construction of a Solar Cell

A solar cell is basically a junction diode, although its construction it is little bit different from conventional p-n junction diodes. A very thin layer of p-type semiconductor is grown on a relatively thicker n-type semiconductor. We then apply a few finer electrodes on the top of the p-type semiconductor layer.



These electrodes do not obstruct light to reach the thin p-type layer. Below the p-type layer there is a p-n junction. A current collecting electrode is provided at the bottom of the n-type layer and the entire assembly is encapsulated by thin glass to protect the **solar cell** from any mechanical shock.