

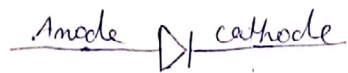
[Question - 2 section - 4]

Answer

Optical detector: -

Many of the requirements are similar to those of an optical source. Fibre optic system require that optical detectors, be compatible in size to low-loss optical fibres to allow for efficient coupling and easy packaging, have a high sensitivity at the operating wavelength of the optical source.

Symbol of PIN Diode: -



Working of the pin diode: -

Although the working of the pin diode is similar to a regular diode, there are some differences due to the additional intrinsic layer. Pin diode is an inferior rectifier but is widely used suitable for switches, attenuators etc.

Forward biased operation of PIN Diode: -

When the PIN diode is subjected to forward bias, the depletion region at the $p-n$ junction reduces. With the reduction of the depletion region, current starts flowing through the diode. The PIN diode acts as a variable resistance when operated in forward bias. A high electric field is developed across the junction and this speeds up the transport of charge carriers from the P region to the N region. This helps faster operation and therefore pin diode is used for high frequency applications.