

29 Lecture - PHY301

Important Subjective

What is a PN junction?

Answer: A PN junction is formed when a P-type semiconductor is joined to an N-type semiconductor.

What is forward biasing of a PN junction?

Answer: Forward biasing of a PN junction is the process of applying a positive voltage to the P-type material and a negative voltage to the N-type material.

What is reverse biasing of a PN junction?

Answer: Reverse biasing of a PN junction is the process of applying a negative voltage to the P-type material and a positive voltage to the N-type material.

What is the forward voltage drop of a PN junction diode?

Answer: The forward voltage drop of a PN junction diode is typically around 0.7V for silicon diodes and 0.3V for germanium diodes.

What is reverse saturation current?

Answer: Reverse saturation current is the small current that flows when a PN junction is reverse-biased.

What is the depletion region of a PN junction?

Answer: The depletion region is the region around the PN junction where the mobile charge carriers have been depleted due to the diffusion of majority carriers.

What is the breakdown voltage of a PN junction diode?

Answer: The breakdown voltage of a PN junction diode is the voltage at which the diode breaks down and allows a large current to flow in the reverse direction.

What is the reverse leakage current of a PN junction diode?

Answer: The reverse leakage current is the small current that flows in the reverse direction even when the diode is reverse-biased.

What is the diode equation?

Answer: The diode equation is an empirical relationship between the current flowing through a PN junction diode and the voltage across it.

What is the ideality factor of a PN junction diode?

Answer: The ideality factor is a measure of how closely the behavior of a PN junction diode follows the ideal diode equation. A value of 1 indicates ideal behavior, while values greater than 1 indicate non-ideal behavior.