

# 31 Lecture - PHY301

## Important Subjective

**What is the forward voltage drop of a silicon junction diode?**

**Answer:** The forward voltage drop of a silicon junction diode is typically between 0.6 to 0.7 volts.

**What is the forward bias configuration of a junction diode?**

**Answer:** The forward bias configuration of a junction diode is when the positive terminal of a voltage source is connected to the p-type semiconductor and the negative terminal to the n-type semiconductor.

**What is the reverse breakdown voltage of a junction diode?**

**Answer:** The reverse breakdown voltage of a junction diode is the voltage at which the diode experiences a sudden increase in current flow in the reverse bias configuration.

**What is the reverse recovery time of a junction diode?**

**Answer:** The reverse recovery time of a junction diode is the time delay for current to completely cease flowing through the diode when it is switched from forward bias to reverse bias.

**What is the capacitance of a junction diode?**

**Answer:** The capacitance of a junction diode is the property of the p-n junction to behave like a capacitor.

**What is the temperature dependence of the forward voltage drop of a junction diode?**

**Answer:** The forward voltage drop of a junction diode decreases as the temperature increases.

**What is the temperature dependence of the reverse breakdown voltage of a junction diode?**

**Answer:** The reverse breakdown voltage of a junction diode increases as the temperature increases.

**What is the Zener effect in a junction diode?**

**Answer:** The Zener effect is the mechanism of the reverse breakdown of a junction diode due to the generation of minority carriers at a high electric field in the depletion region.

**What is the avalanche effect in a junction diode?**

**Answer:** The avalanche effect is the mechanism of the reverse breakdown of a junction diode due to the collision of free electrons with atoms in the depletion region.

**Why is the reverse recovery time of a junction diode an important consideration in high-frequency circuits?**

**Answer:** The reverse recovery time of a junction diode is an important consideration in high-frequency circuits because a shorter reverse recovery time results in faster switching speeds and better efficiency of the circuit.