V-I Characteristics of Diode!

Jet In forward biasing Vy is the voltage across the p-n Junction and voltage across the p-n Junction and If is the forward current then graph of If against Vy is called forward charactristics of p-n Junction.

Charactristics of p-n Junction.

The forward charactristics of diode is shown below—

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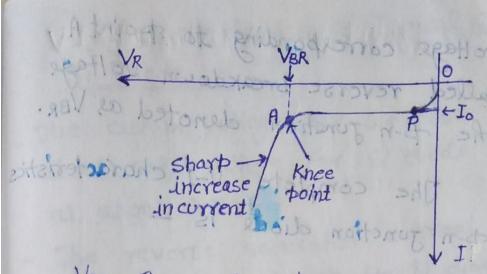
Forward Charactristics of a diode

Basically forward characteristics can be divided into two regions:

(i) Region o to P-

As long as up is less than cut-in voltage (Vr), the corrent flowing is

1



VBR-Reverse Breakdown Voltage

Reverse Charactristics of diode

As the reverse voltage is increased, reverse corrent increases invitially but after a small voltage becomes constant equal to reverse saturation current Io. This point is shown as P.

After this, though reverse voltage is increased, the reverse current remains constant till point A.

At point A reverse breakdown at the diode occurs and current increases sharply that damaging the diode. This to the reverse to int is called knee of the reverse characteristics.

The voltage corresponding to point A is called reverse breakdown voltage of the p-n junction denoted as VBR. The complete U-I characteristic of p-n Junction diade is -If (mA) dored some - 19/ F.B. region Reverse Charaphiles of diode VR VBR 0 Vr (Gut-in Vy In Noltage) exter a small voltage becomes Breakdown / region for notor the set of loups R.B. region IR (4A) 21 tolog 2110 V-I Characteristics of a diode increased, the reverse correct remains constant till point A: At tooms A reverse breakdown at the eliods occurs and current in creases sharply that damaging the diods. This point is called knee of the reverse characteristics.

V-I Characteristics of Typical Ge and Si Diode :-

The cut-in voltage for Ge diode is about 0.7 while for Si diode is as about 0.7 v.

- The reverse saturation current to is of the order of nA for Si diode while it is of the order of MA for Grediode.

- Reverse breakdown voltage for Si diode is higher than that of the Gre clide for a given rating.

So V-I characteristics of typical Gre and Si cliodes are -

