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COIMBATORE-35

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DEPARTMENT OF EEE

COURSE NAME: 19EET202/ ANALOG ELECTRONICS

II YEAR / III SEMESTER

Unit 2 – Multi junction devices

Topic 3: UJT



Transistor is a semiconductor switching device with 3 terminals and is abbreviated as UJT.

It is also called so because of the presence of only one junction.

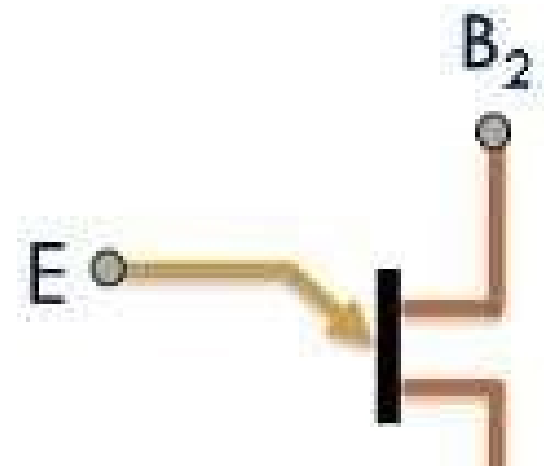
It has the ability to limit large power with a small input signal.

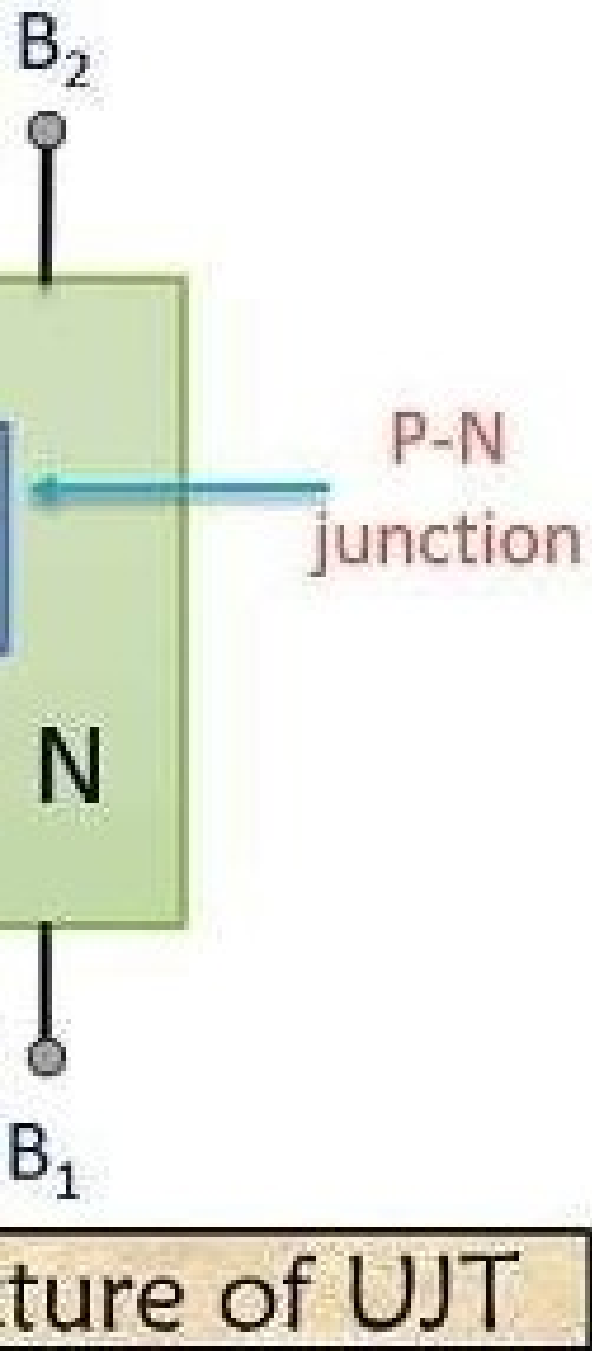
double base diode.

It is a device that possesses negative resistance characteristics.

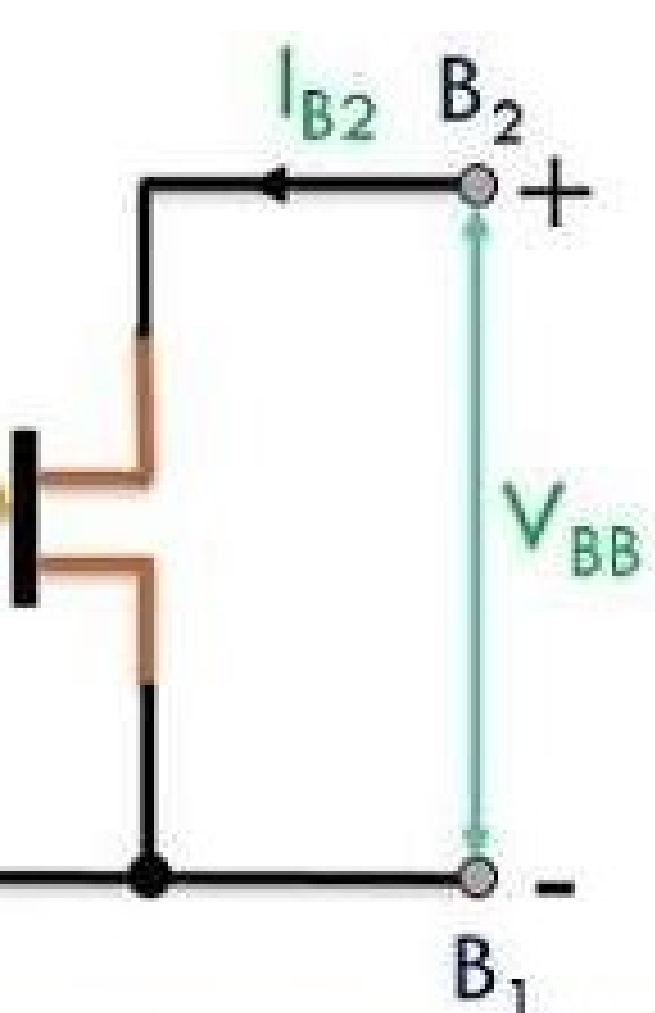
When the emitter current rises regeneratively when triggered.

A negative supply is needed in order to restrict it.

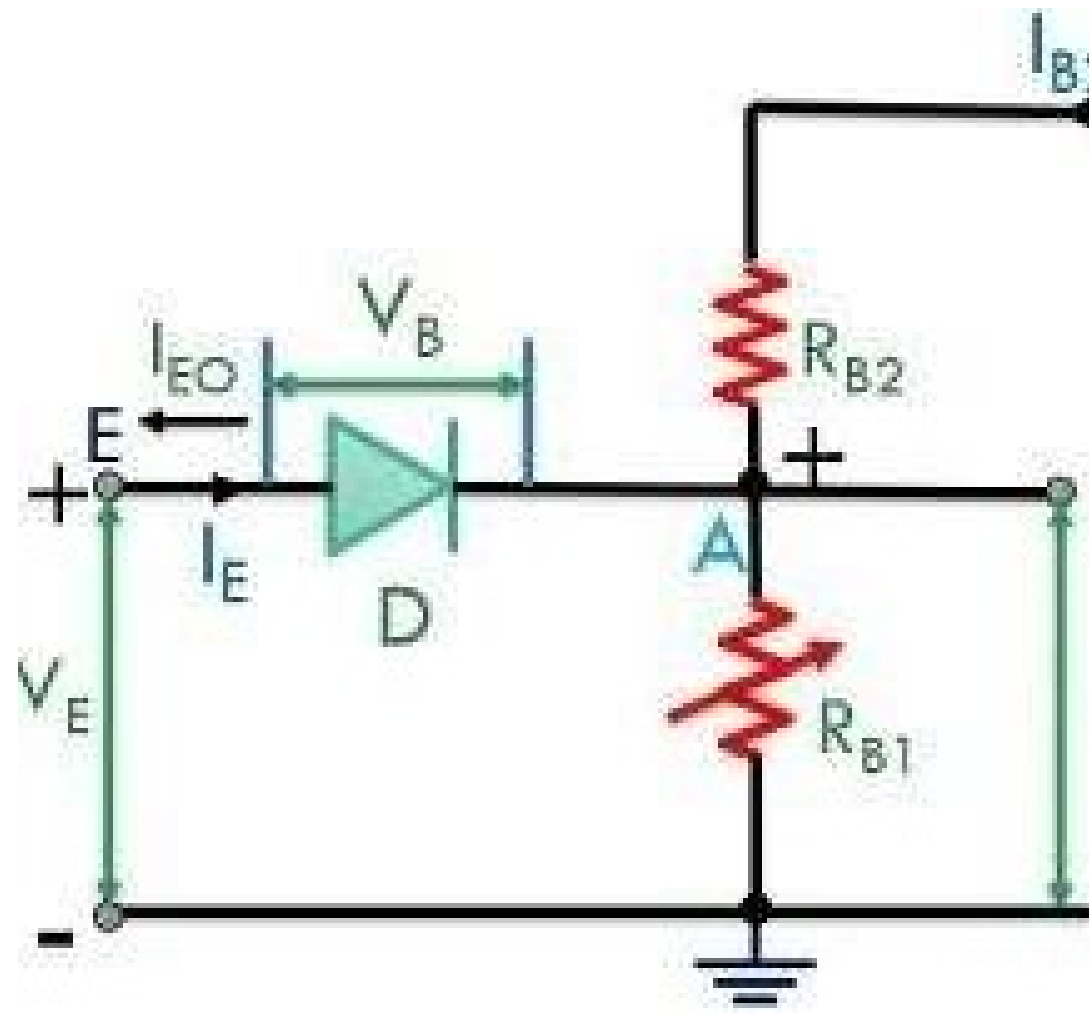




- Its structure is almost similar to channel JFET. UJT consists of a doped N-type silicon bar in which a P material is diffused thus producing a P-N junction.
- Due to the existence of a single P-N junction, it is termed as a Unijunction Transistor device.
- It consists of two ohmic contacts at the two ends of the bar which are labelled as Base 1 (B1) and Base 2 (B2).



arrangement



Equivalent circuit of

two resistor of the circuit together constitute a resistance which is the resistance between B2 and B1. If the emitter is kept open is known as **Interbase resistance** R_{BB} .

$$R_{BB} = R_{B1} + R_{B2}$$

usually the value of R_{B1} is greater than that of R_{B2} .

$$V_A = V_{BB} \times \frac{R_{B1}}{R_{B1} + R_{B2}}$$

$$V_A = \eta V_{BB}, \quad \text{where } \eta \text{ is the intrinsic standoff ratio}$$

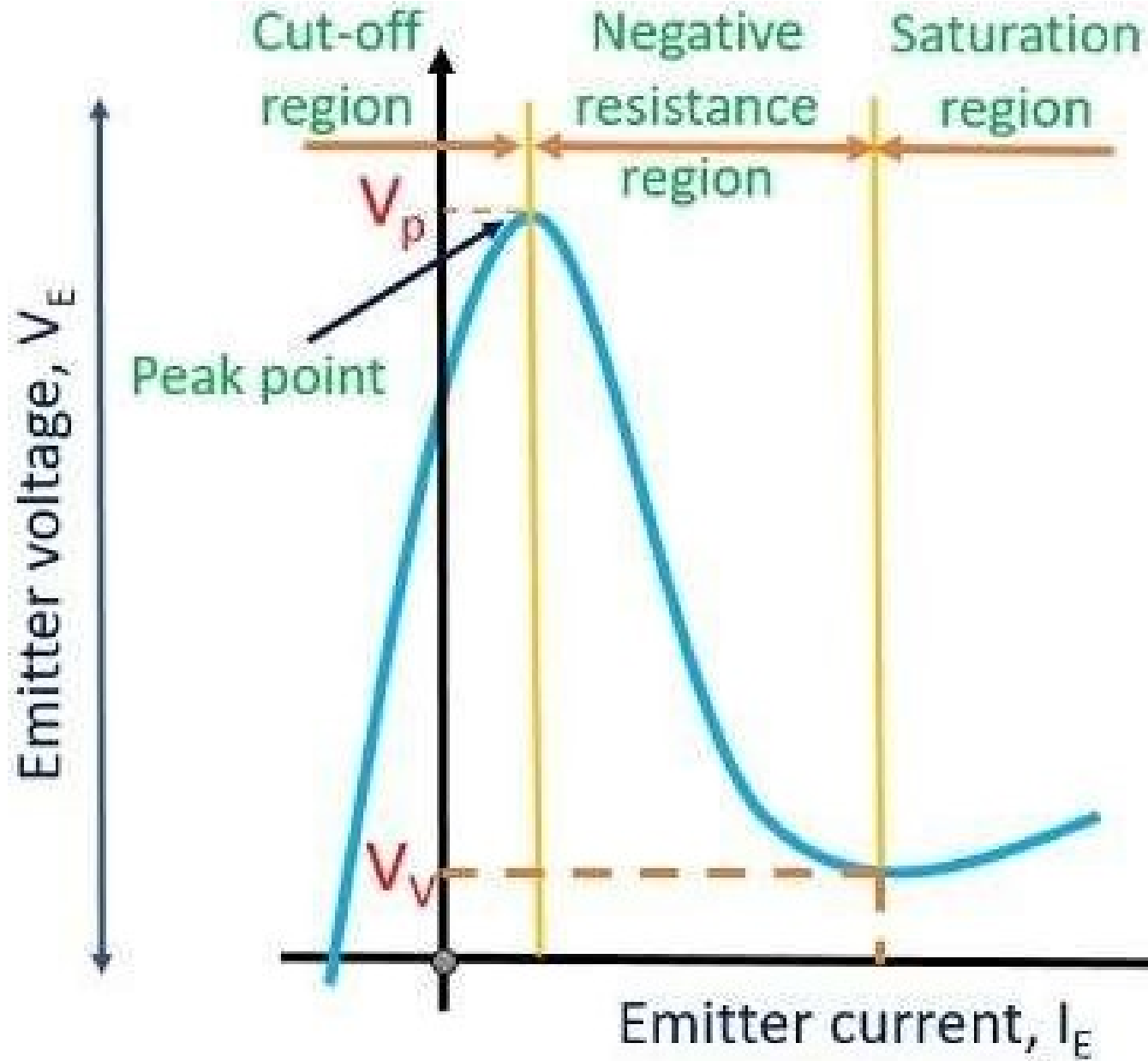
der a condition when there is no emitter potential
cuit. In such a case the diode gets reverse biased

$$V_A + V_B = \eta V_{BB} + V_B$$

ceeding further, if the emitter potential is increase
will now get forward biased. The emitter potential
ode in forward biased condition is known as
ge and is denoted by V_p .

minimum value of IE to trigger the device is known
current of the emitter terminal denoted by I_p .

transistor



Emitter characteristic of UJT

MARY





KEEP
LEARNING..
Thank u

SEE YOU IN NEXT CLASS