



S J P N Trust's

Hirasugar Institute of Technology, Nidasoshi.

Inculcating Values, Promoting Prosperity

Approved by AICTE, Recognized by Govt. of Karnataka and Affiliated to VTU Belagavi

EEE Dept.

PE

VSem

2018-19

Electrical and Electronics Engg. Department

Course : POWER ELECTRONICS -15EE53.

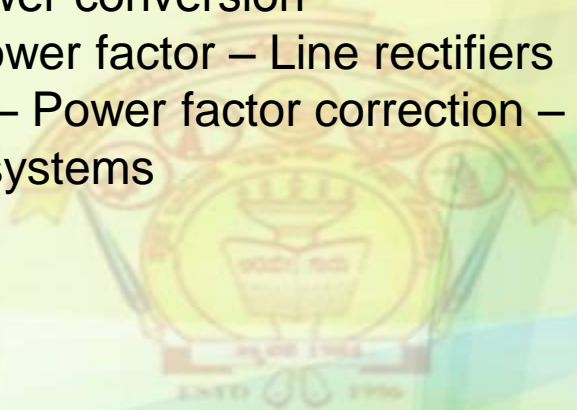
Sem.: 5th (2018-19)

Course Coordinator:

V.B.Dhere

Areas of Application of Power Electronics

- High frequency power conversion
- Power Transmission
HVDC – DC/DC, inverters
- Low frequency power conversion
- Power quality – Power factor – Line rectifiers
- Distributed power – Power factor correction – Harmonic reduction P i filt i p systems
- Power devices
- Passive filtering
- Active filtering



Thyristors:

Are 4-layer silicon semiconductors.

Use low input power to control large load currents.

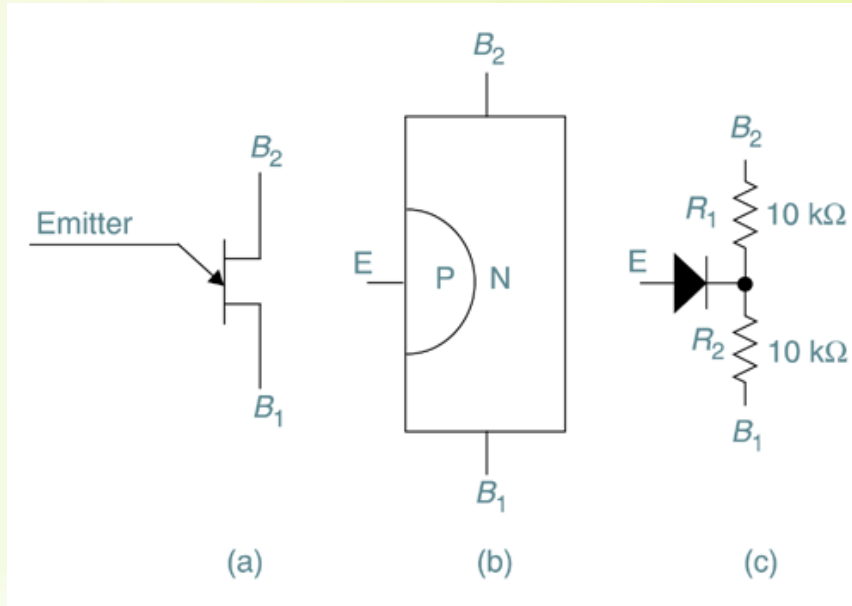
Are very common in industrial power & motor control.

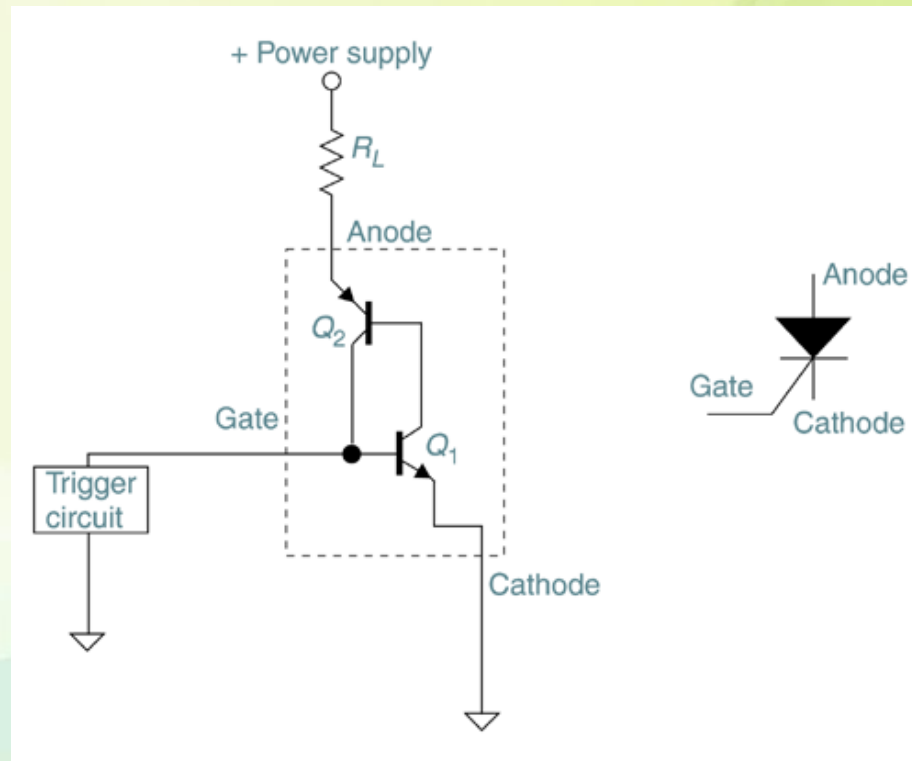
Are inherently nonlinear devices.

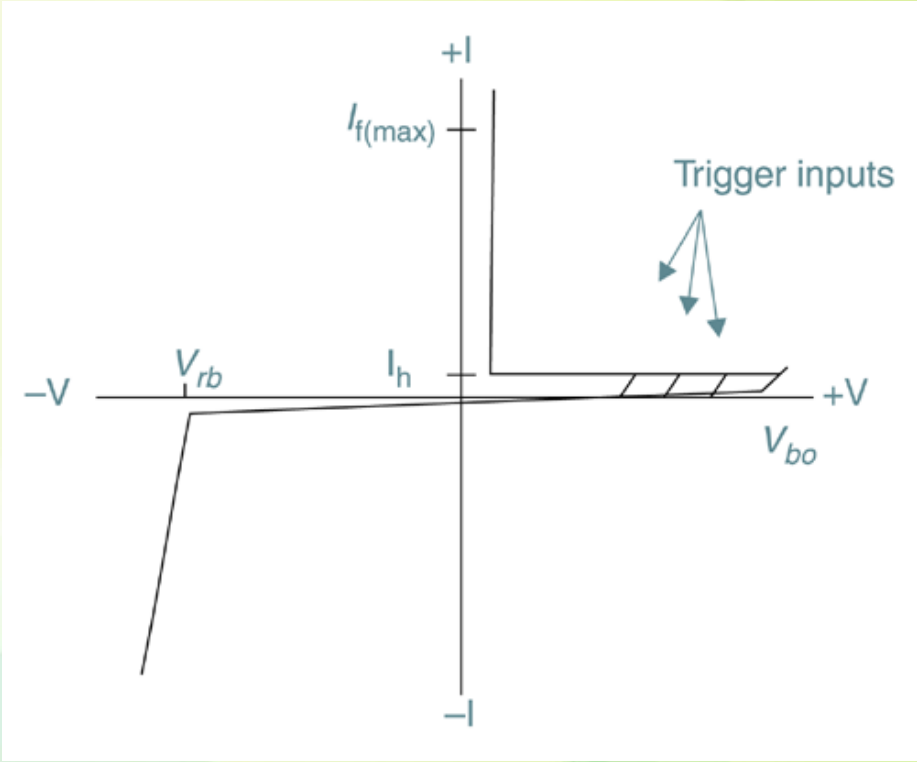
Have two states: ON and OFF.

Unijunction transistors (UJTs) are not thyristors, but are commonly used with SCRs

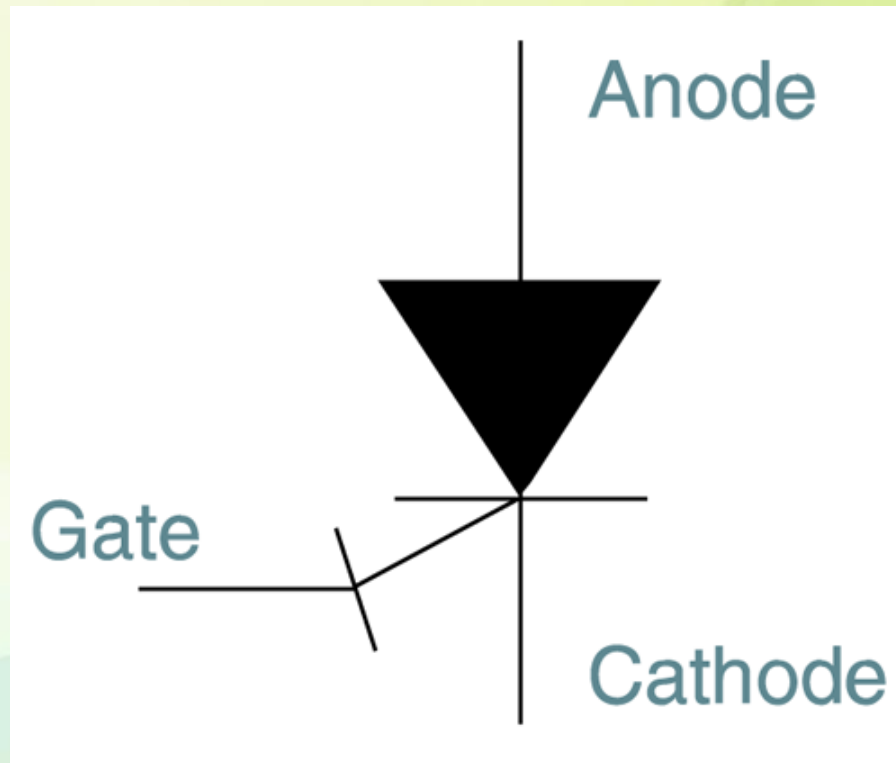
Unijunction Transistors (UJTs)



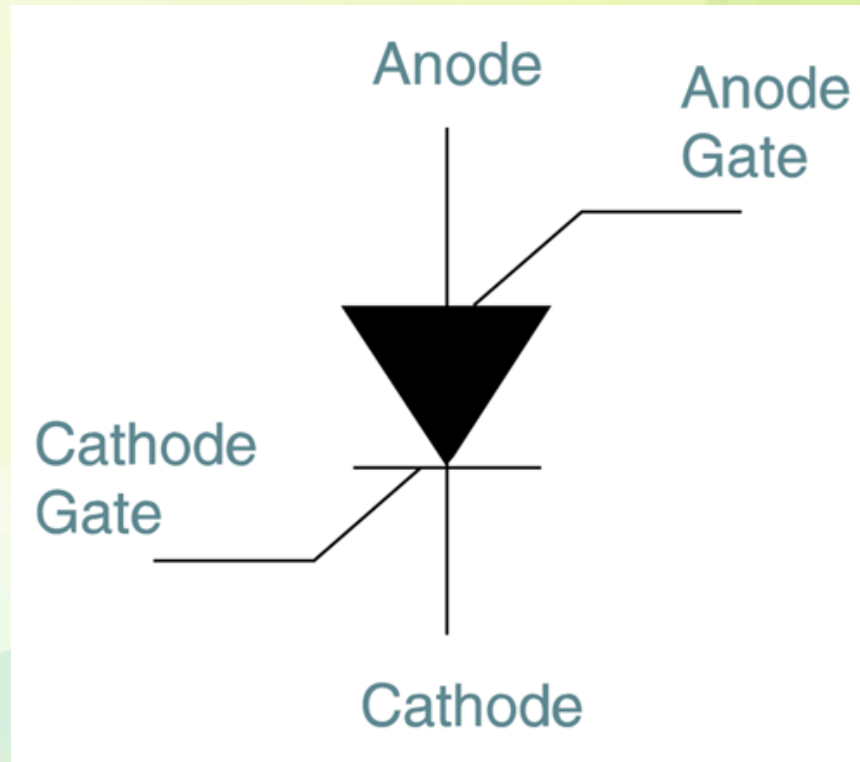




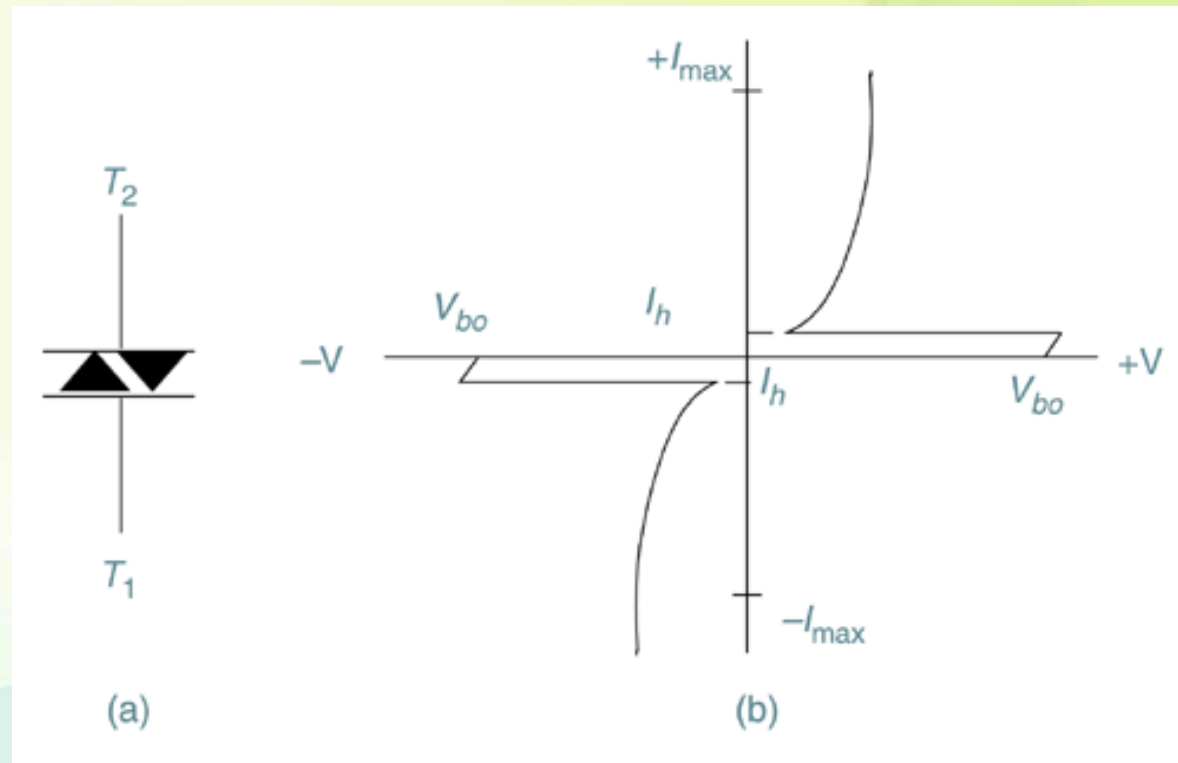
Gate-Turnoff SCR (GTO)



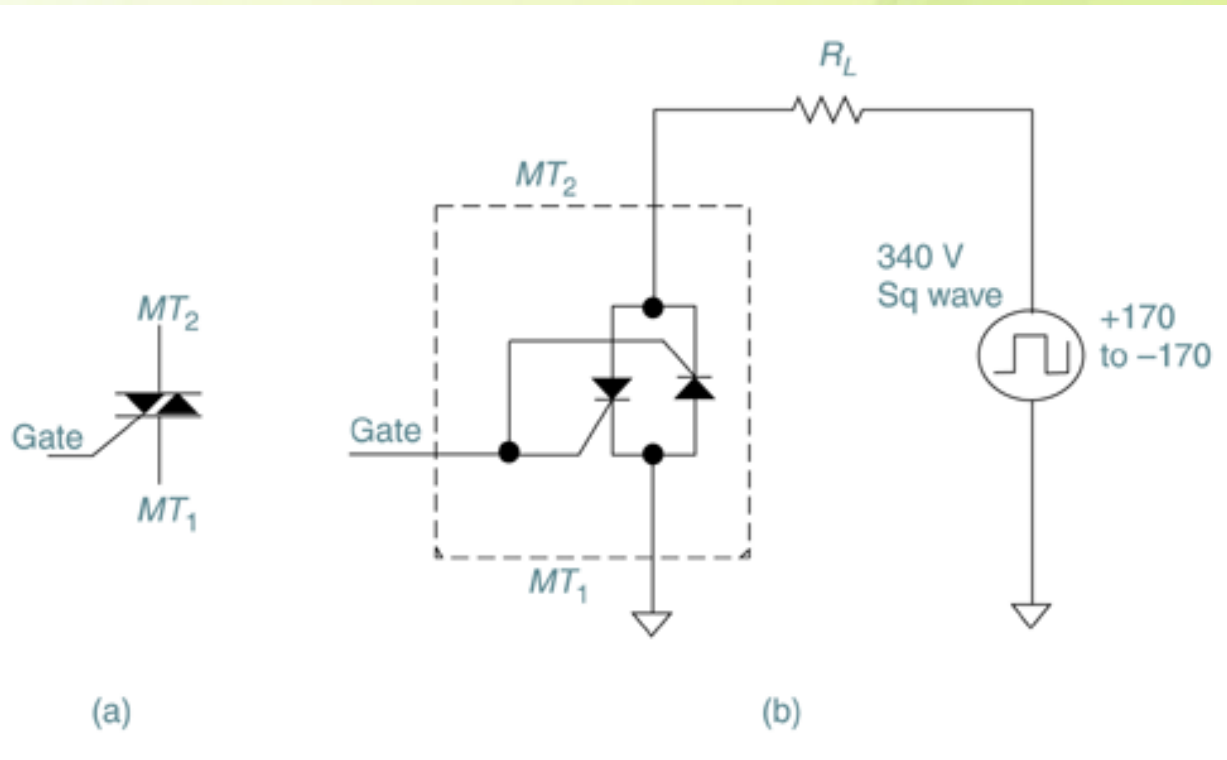
Silicon Controlled Switch:SCS

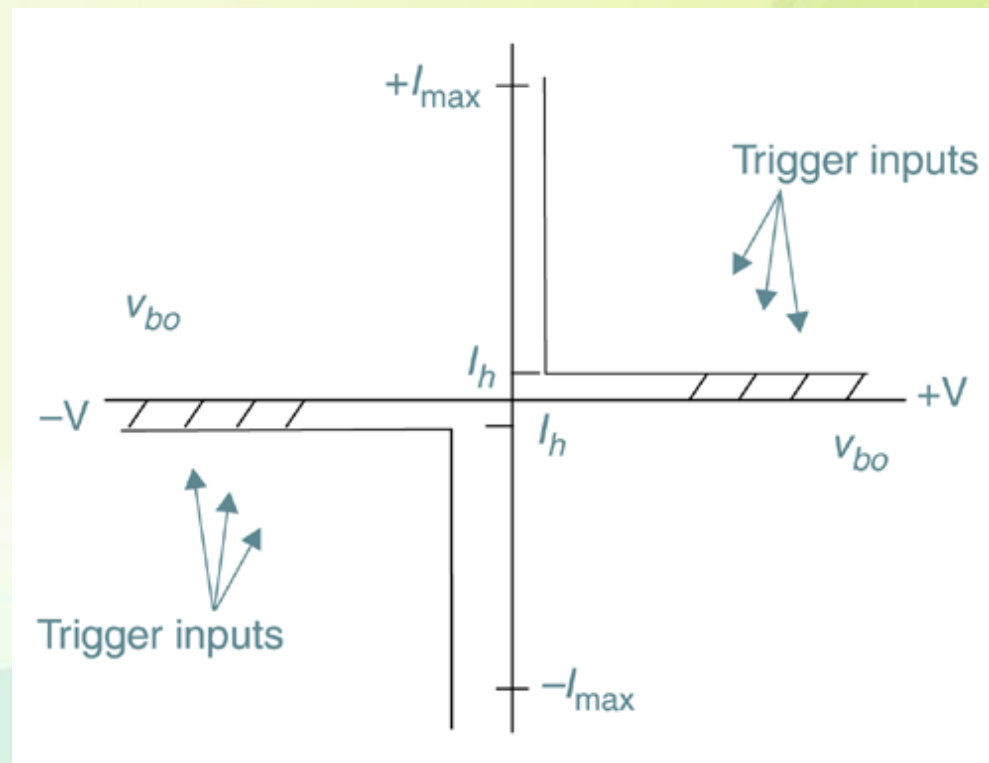


DIACS



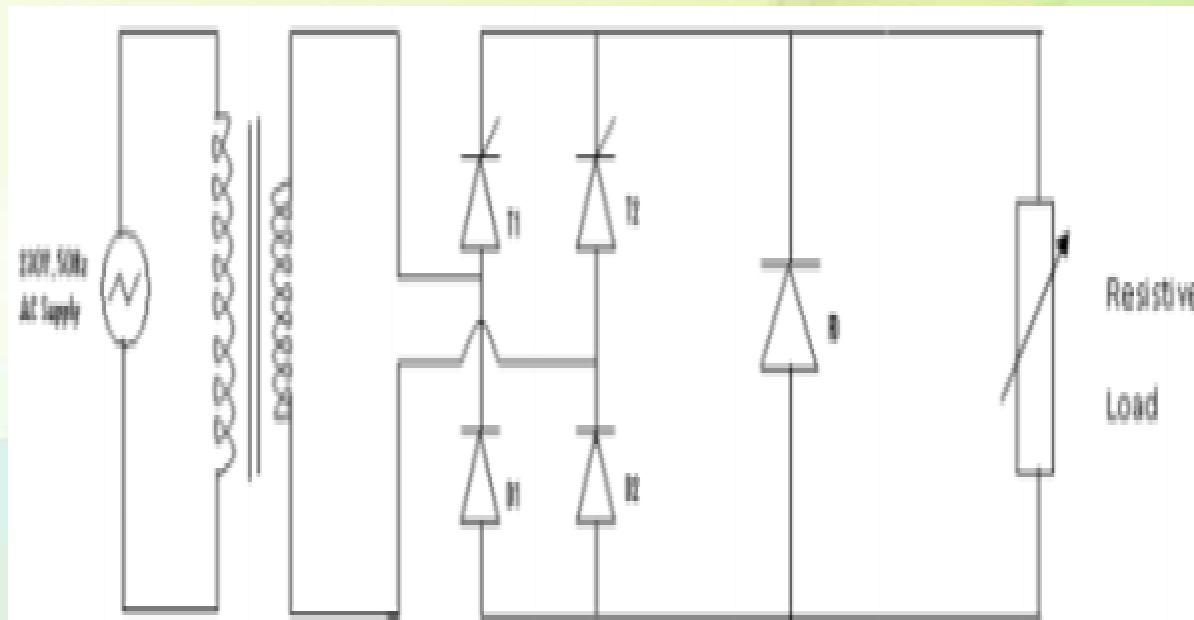
TRIACs





- A single-phase AC controller (voltage controller) is used to vary the value of the alternating voltage after it has been applied to a load circuit. A thyristor is also placed between the load and the constant source of AC voltage.

Circuit Diagram with a Resistive Load



Queries?

