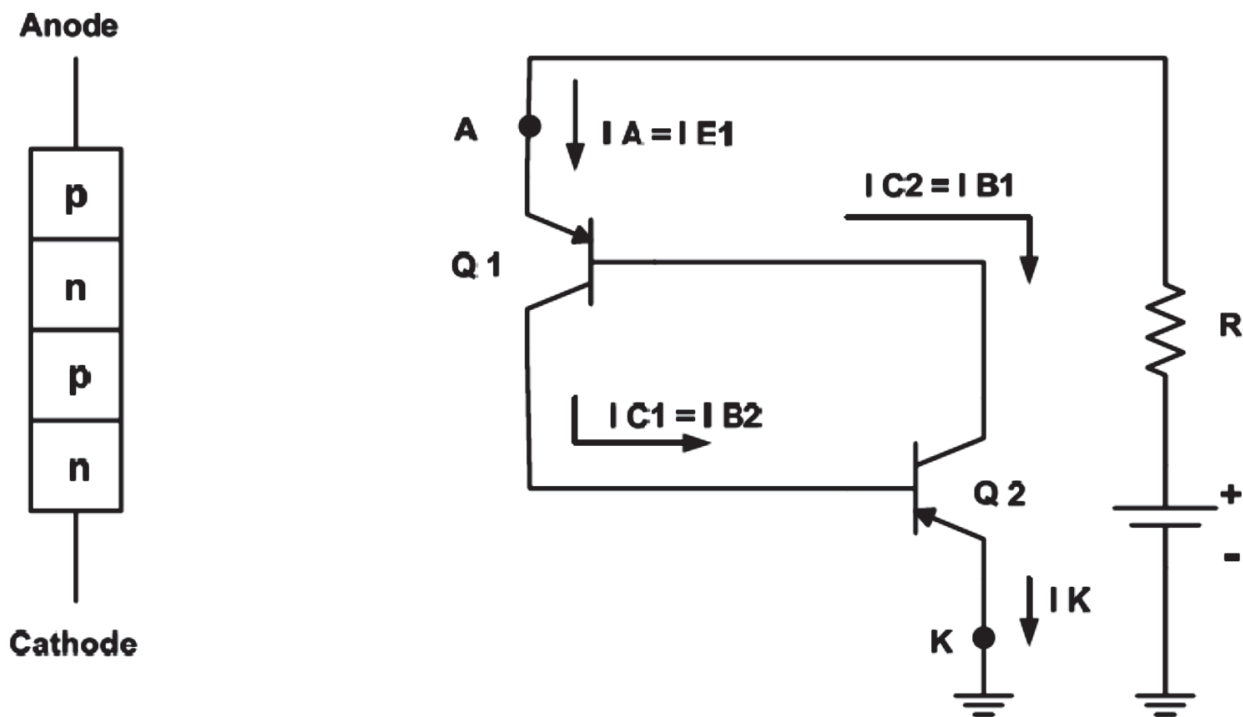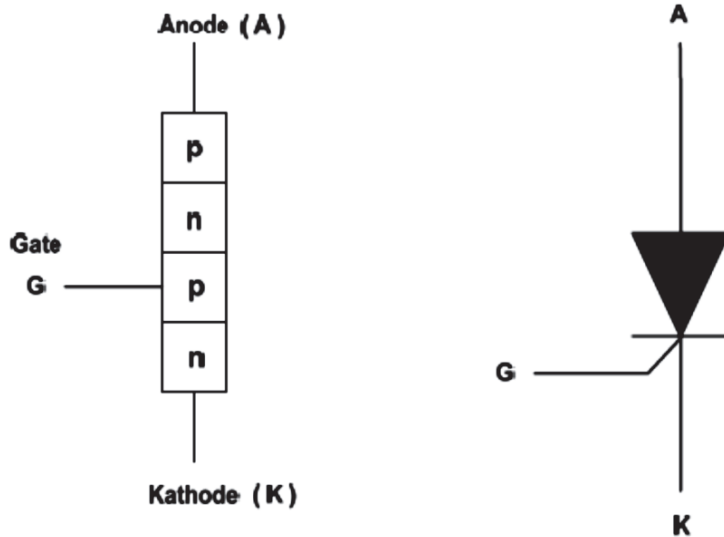# Thyristor

1. **Construction of thyristor .**

2. **Thyristor characteristics**

The basic thyristor is 4 – layer devise with two terminals , anode and cathode . The pnpn structure can be represented by an equivalent circuit consisting of a pnp transistor and an npn transistor as shown in figure below . The upper pnp layers form Q1 and the lower npn layers form Q2 , with the two middle layers shared by both equivalent transistors .

## Silicon – controlled rectifier (SCR)

An SCR (silicon–controlled rectifier)is a thyristor with three terminals , anode , cathode and gate . The basic structure of SCR and the schematic symbol is shown in figure below .
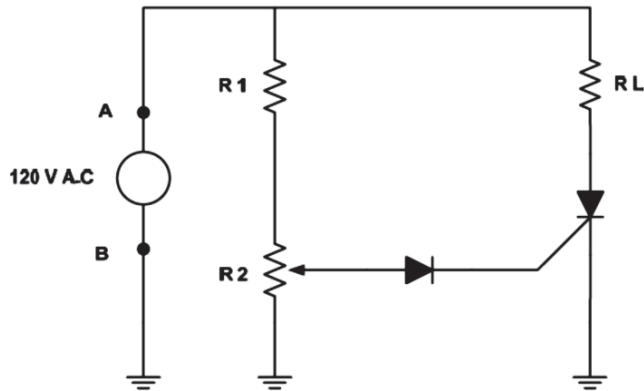
Class: 3rd
Subject: Electrical & Electronics Eng.
Lecturer: Omar A. Alkawak
E-mail: OmarAhmed@mustaqbal-
college.edu.iq

SCR application

1. Switching applications .

2. Half – wave power control

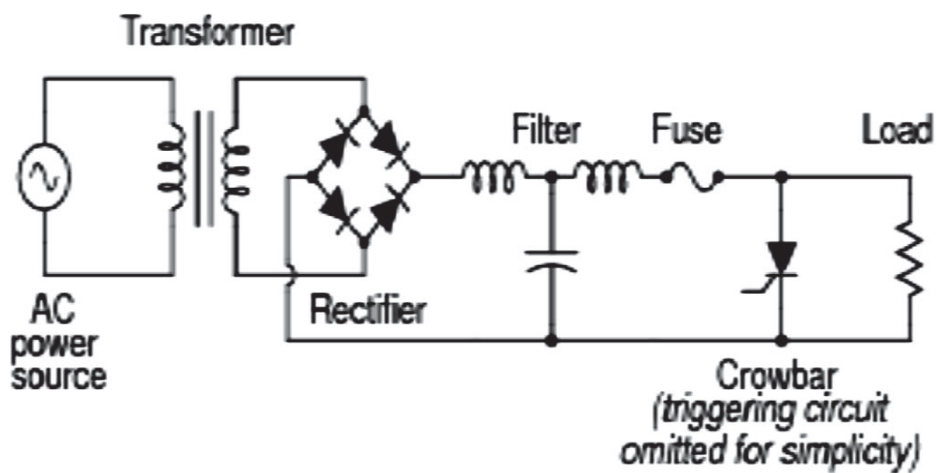**1. ON – OFF control of current :**
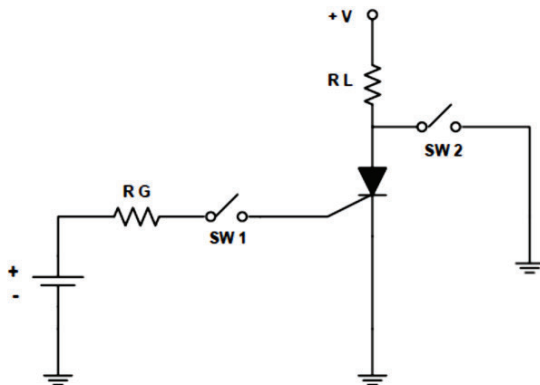
2. Half – wave power control

SCR applications

1. DC motor start/stop control circuit .

2 Crowbar circuit used in DC power supply

1. DC motor start/stop control circuit

B-Crowbar circuit used in DC power supply