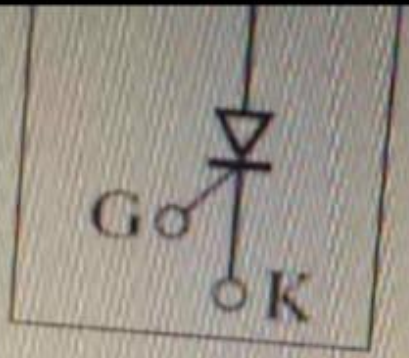


The SCR is a four layer three terminal device with junctions J_1, J_2, J_3 as shown. The construction of SCR shows that the gate terminal is kept nearer the cathode. The approximate thickness of each layer and doping densities are as indicated in the figure. In terms of their lateral dimensions Thyristors are the largest semiconductor devices made. A complete silicon wafer as large as ten centimeter in diameter may be used to make a single high power thyristor.

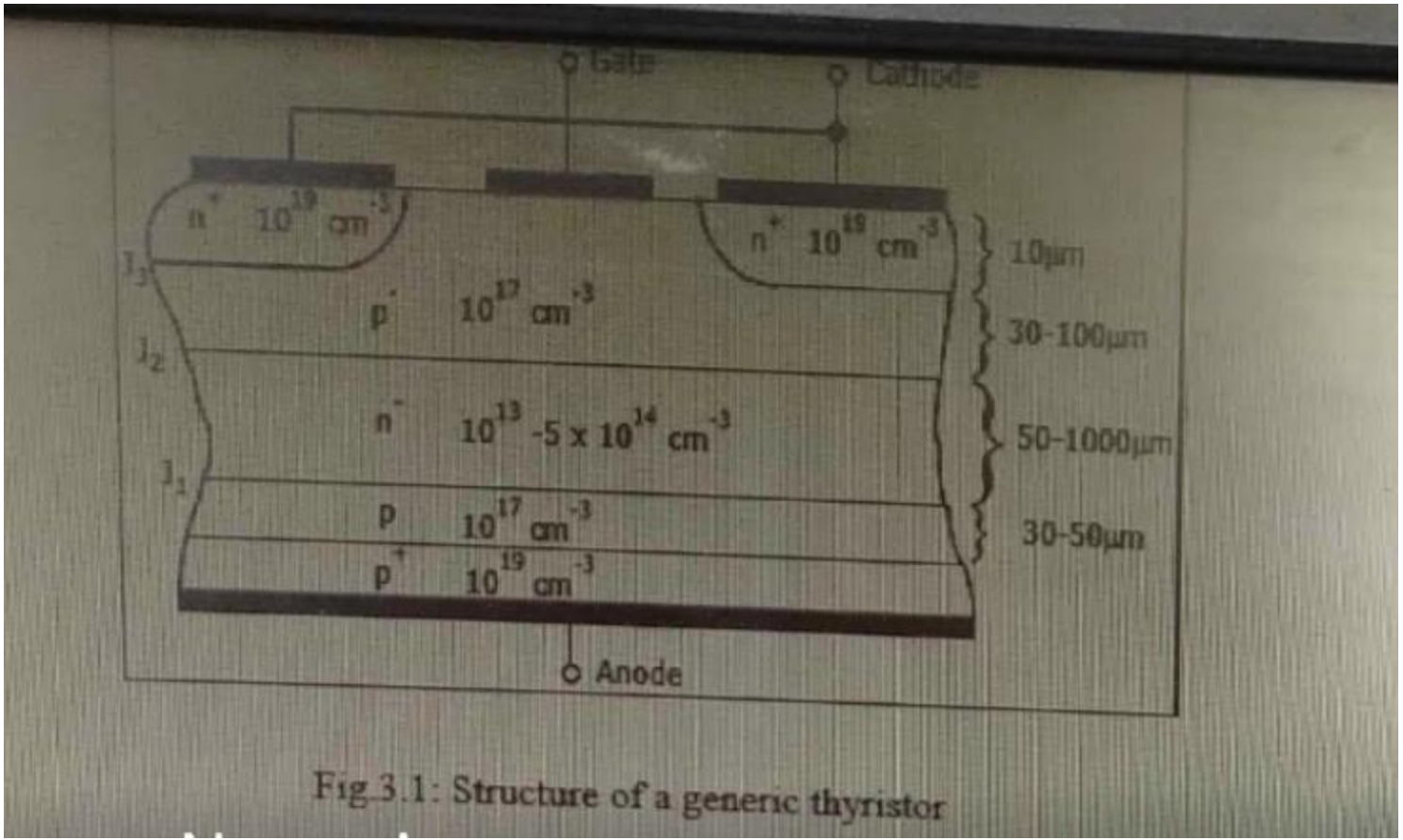
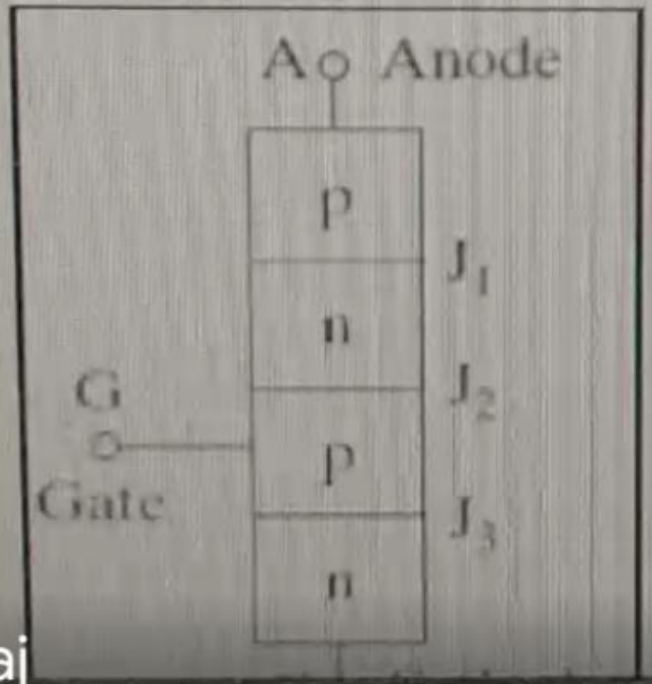


Fig.3.1: Structure of a generic thyristor

vitched on, the voltage drop across it is very small, typically 1 to 1.5V. The and
mited only by the external impedance present in the circuit.



When the anode is made positive with respect the cathode junctions J_1 forward biased and junction J_2 is reverse biased. With anode to cathode voltage small, only leakage current flows through the device. The SCR is then said to forward blocking state. If V_{AK} is further increased to a large value, the reverse biased J_2 will breakdown due to avalanche effect resulting in a large current through th The voltage at which this phenomenon occurs is called the forward breakdown volt Since the other junctions J_1 & J_3 are already forward biased, there will be free mov carriers across all three junctions resulting in a large forward anode current. Once th switched on, the voltage drop across it is very small, typically 1 to 1.5V. The anode limited only by the external impedance present in the circuit.