

## MOSFET

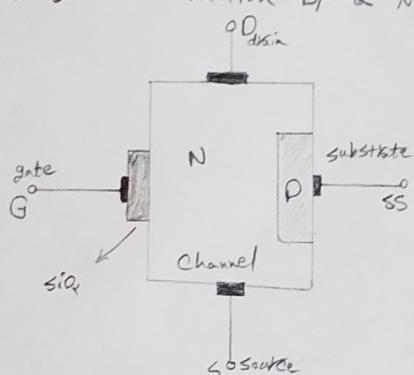
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- FETs (Field Effect Transistors) have a few disadvantages, like high drain resistance, moderate input impedance and slower operation. To overcome these disadvantages, the MOSFET which is an advanced FET is invented.

- MOSFET stands for Metal Oxide Silicon Field Effect Transistor or metal oxide semiconductor field effect transistor. This is also called as IGFET meaning Insulated Gate Field Effect Transistor. The FET is operated in both depletion and enhancement modes of operation.

- Construction of a MOSFET

The construction of a MOSFET is a bit similar to FET. An oxide layer is deposited on the substrate to which the gate terminal is connected. This oxide layer acts as an insulator, and hence the MOSFET has another name as IGFET. In the construction of MOSFET, a lightly doped substrate, is diffused with a heavily doped region. Depending upon the substrate used, they are called as P-type and N-type MOSFETs. The following figure shows the construction of a MOSFET.



The voltage at gate controls the operation of the MOSFET. In this case, both positive and negative voltages can be applied on the gate as it is insulated from the channel. With negative gate bias voltage, it acts as depletion MOSFET while with positive gate bias voltage, it acts as an Enhancement MOSFET.