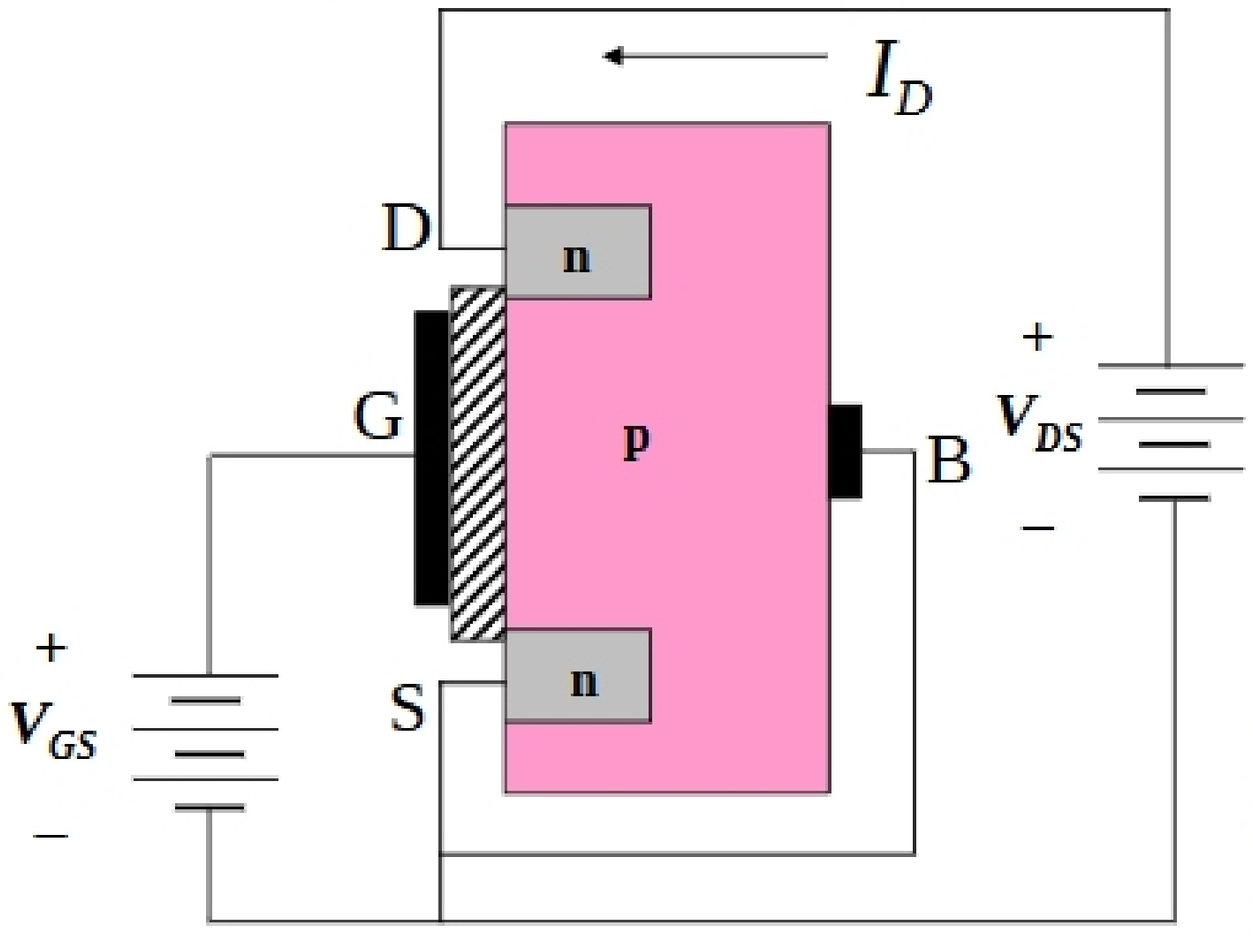
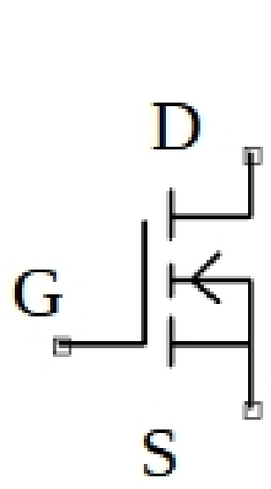
Electronic Circuits Laboratory
EE462G
Lab #5

Biasing MOSFET devices

n-Channel MOSFET

A Metal-Oxide-Semiconductor field-effect transistor (MOSFET) is presented for charge flowing in an n-channel:





B – Body or Substrate

D – Drain

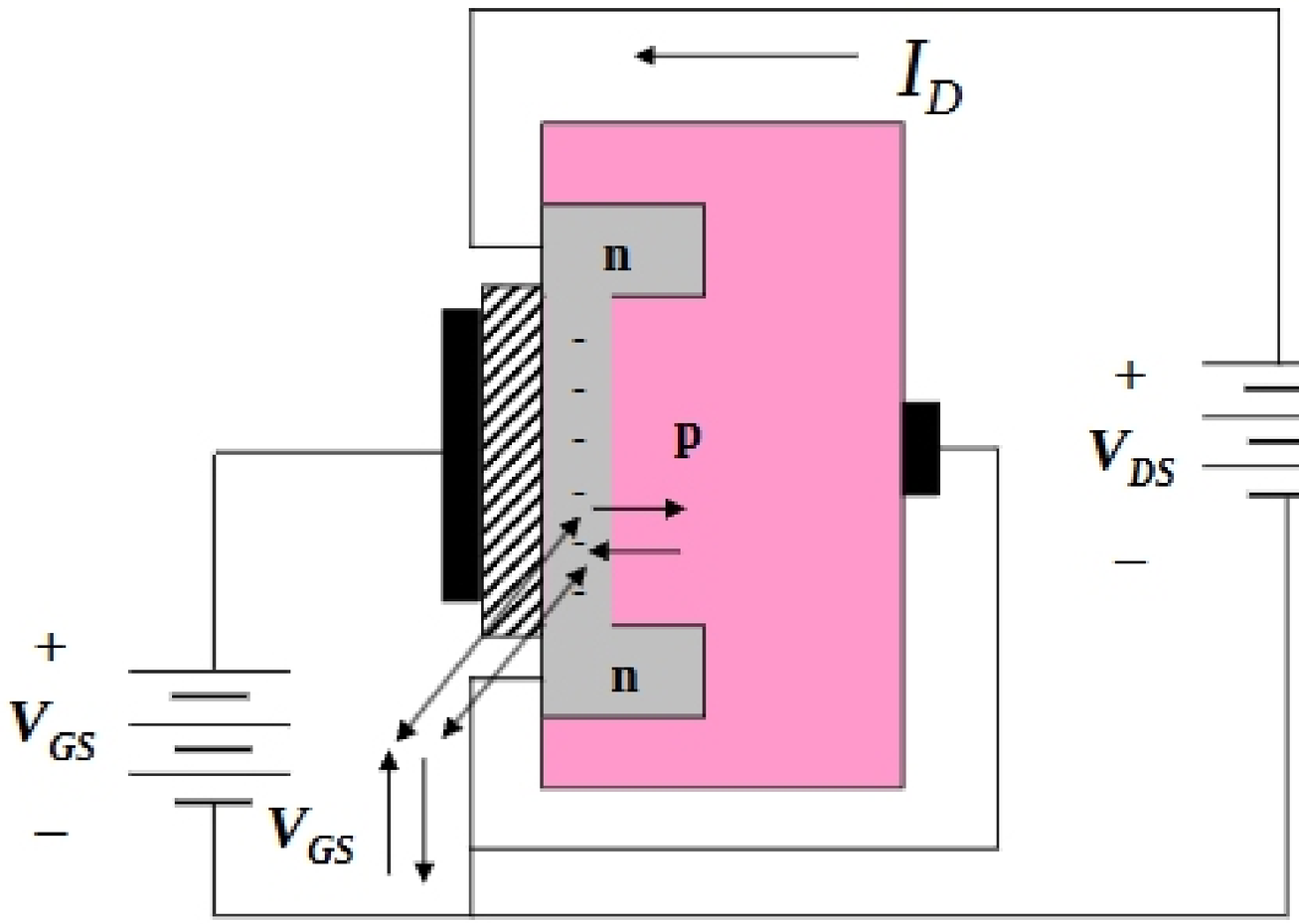
G – Gate

S – Source

For many applications the body is connected to the source and thus most FETs are packaged that way.

FET Operation

The current flow between the drain and the source can be controlled by applying a positive gate voltage:



Three Regions of Operation:

Cutoff region ($V_{GS} \leq V_{tr}$)

Triode region ($V_{DS} \leq V_{GS} - V_{tr}$)

Saturation ($V_{GS} - V_{tr} \leq V_{DS}$)