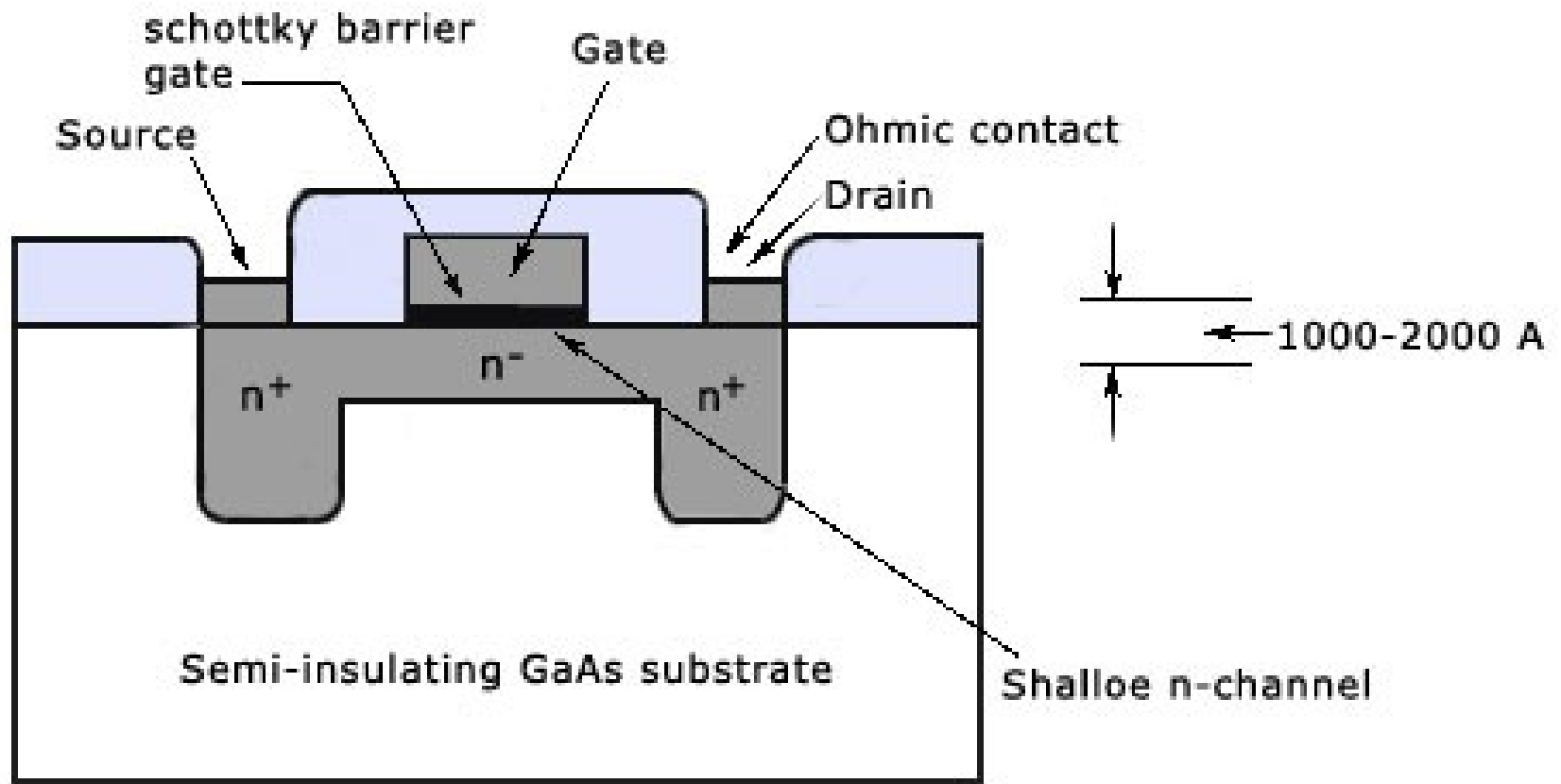




ELECTRONICS DEVICES AND CIRCUITS

OBJECTIVE

**MOSFET, MISFET AND
MESFET**



Side view of MESFET

- The structure of the basic MESFET as shown in the figure below is very simple. The MESFET has a thin n-type active region which is used to join the two ohmic contacts . A thin metal Schottky barrier gate is used to separate the highly doped drain and source terminals.

- GaAs MESFETs are similar to silicon MOSFETs. The major difference is the presence of a Schottky diode at the gate region which separates two thin n-type active regions, that is, source and drain, connected by ohmic contacts. It should be noted that both D type and E type MESFETs, that is, 'ON' and 'OFF' devices, operate by the depletion of an existing doped channel. This can be compared with silicon MOS devices where the E [Enhancement] mode transistor functions by inverting the region below the gate to produce a channel, while the D [depletion] mode device operates by doping the region under the gate slightly in order shift the threshold to a normally 'ON' condition.

MISFET

- MISFET IS HAVING INSULATOR FOR ISOLATION.