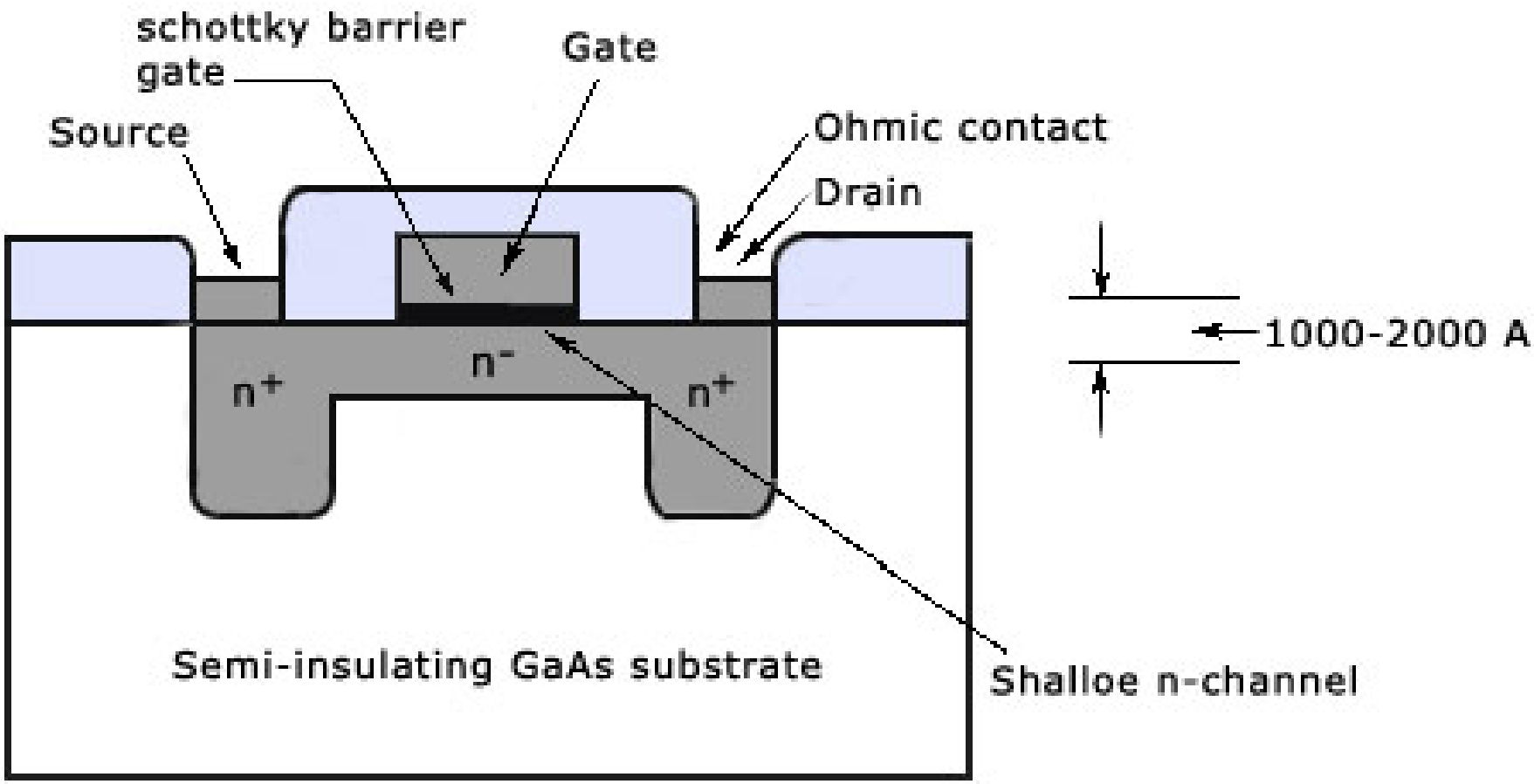
ELECTRONICS DEVICES AND CIRCUITS

SECTION - C

TRANSISTORS

OBJECTIVE

MOSFET, MISFET AND MESFET



Side view of MESFET

- Structure of the basic **MESFET** as shown 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.