

# MOSFET

(METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR)

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## Structure:

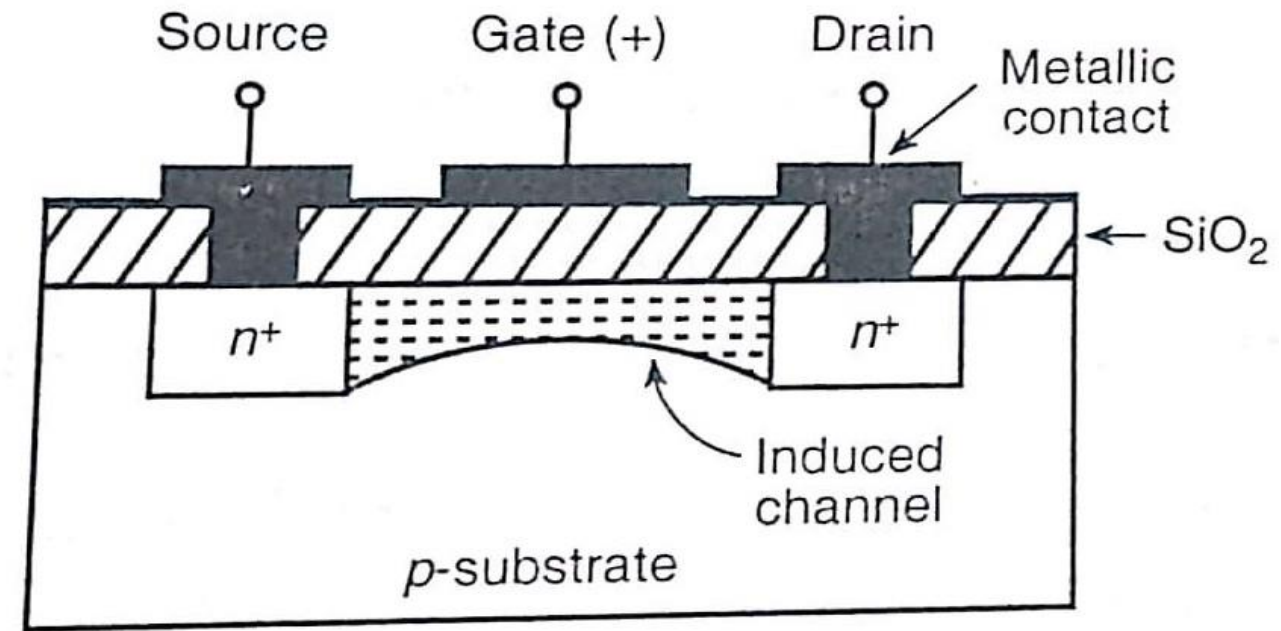
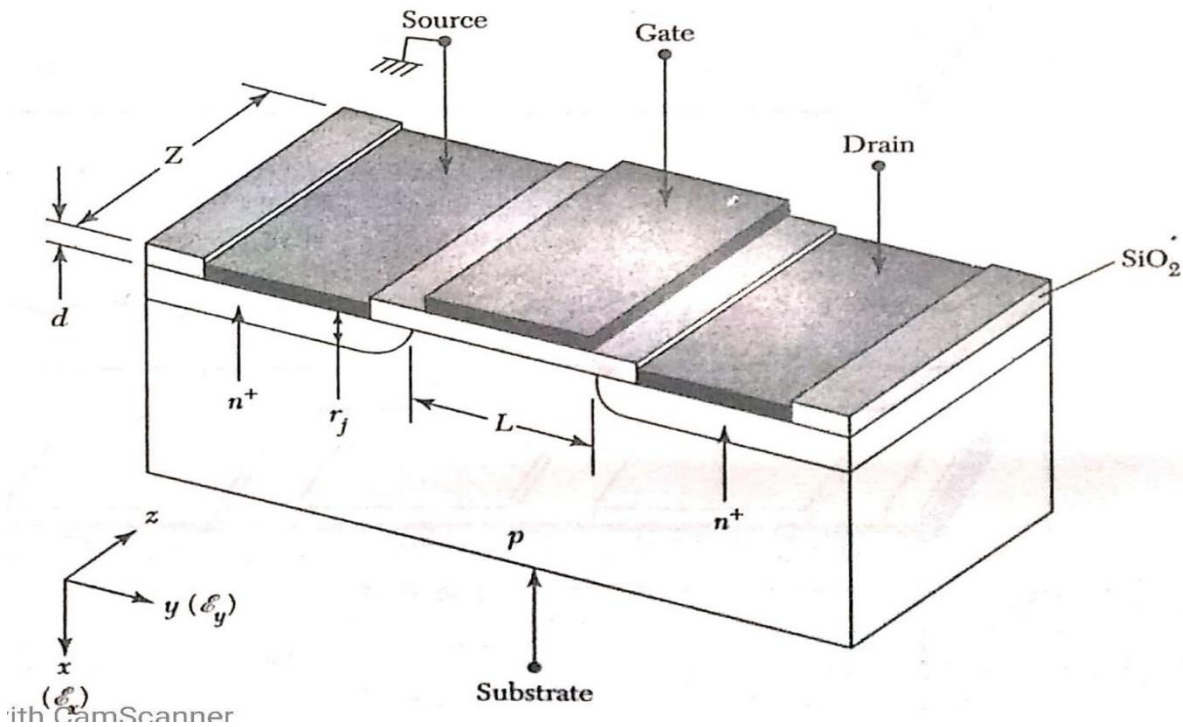
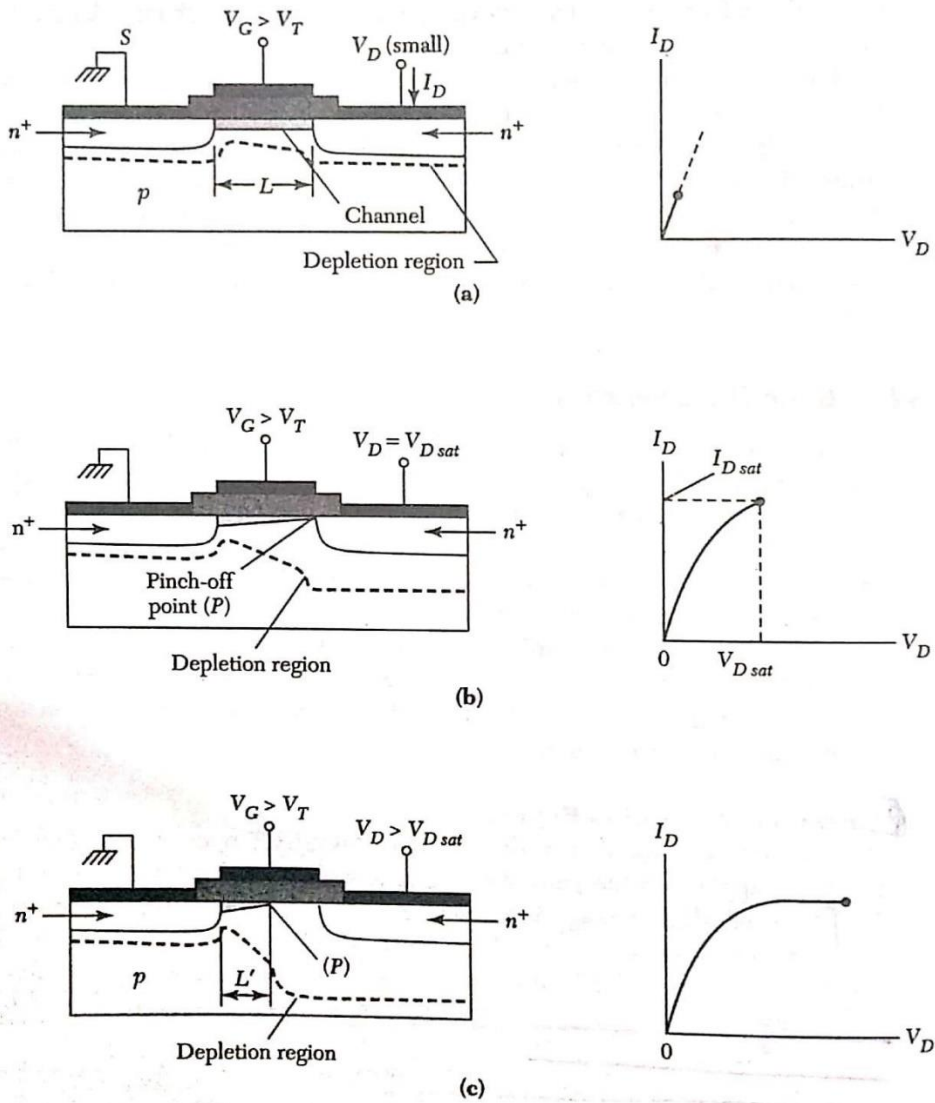


Fig. 9.7-1: Structure of  $n$ -channel enhancement MOSFET

# Operation:

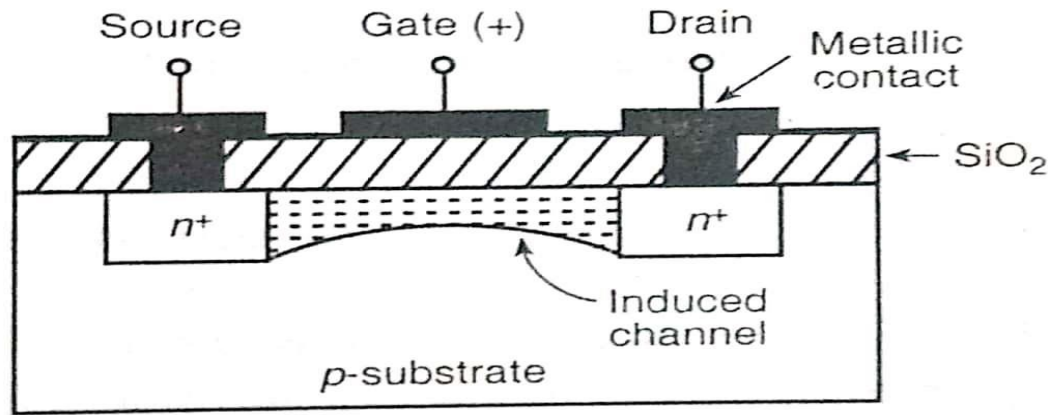


**Fig. 15** Operations of the MOSFET and output  $I$ - $V$  characteristics. (a) Low drain voltage. (b) Onset of saturation. Point  $P$  indicates the pinch-off point. (c) Beyond saturation.

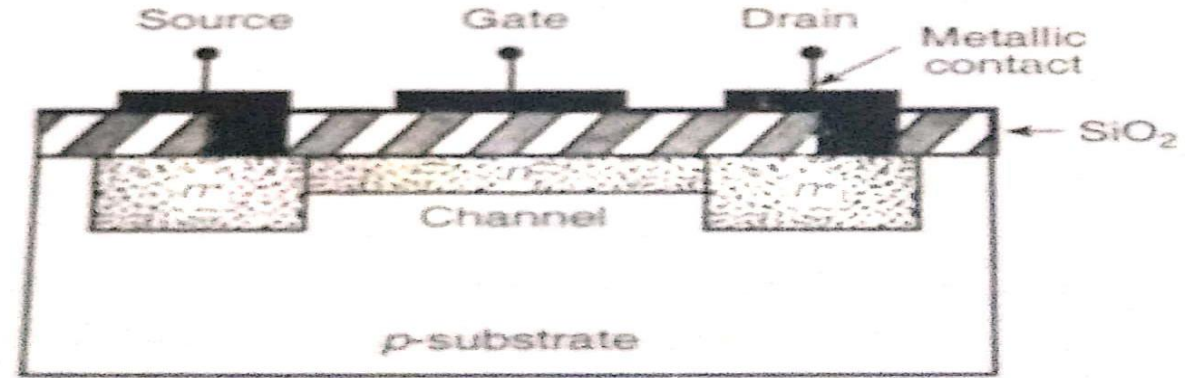
# Types of MOSFET:

Type	Cross section	Output characteristics
n-channel enhancement (normally off)		
n-channel depletion (normally on)		
p-channel enhancement (normally off)		
p-channel depletion (normally on)		

# Enhancement type & depletion type MOSFET:

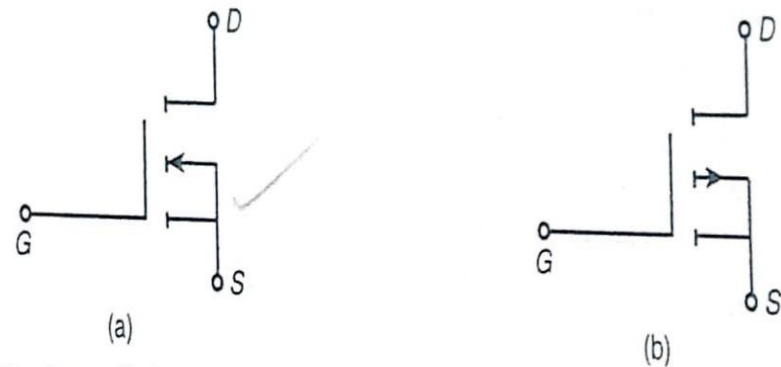


**Fig. 9.7-1:** Structure of *n*-channel enhancement MOSFET



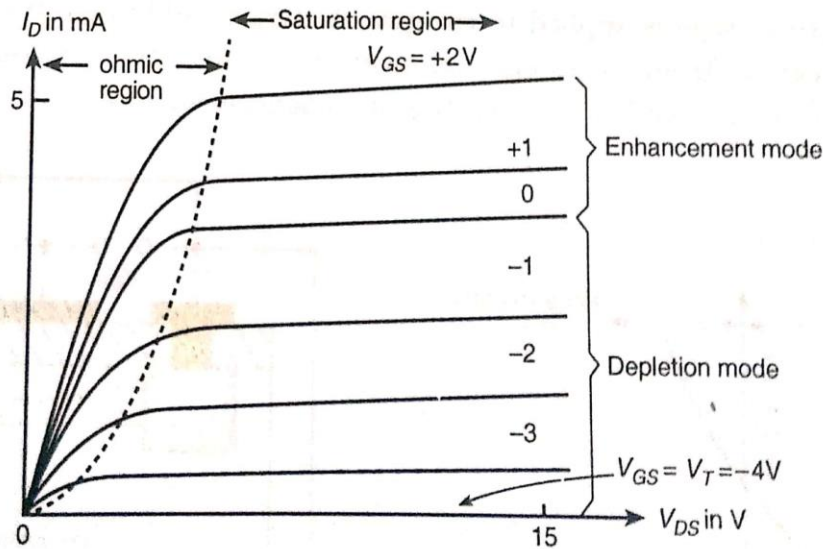
**Fig. 9.7-7:** Structure of *n*-channel depletion MOSFET

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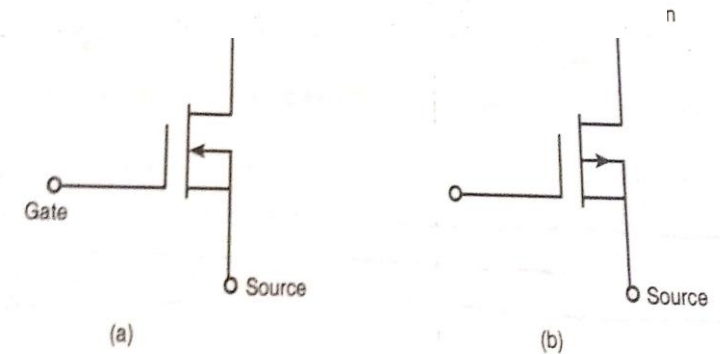
**Fig. 9.7-2:** Enhancement MOSFET symbols (a) *n*-channel (b) *p*-channel

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**Fig. 9.7-8:** Drain characteristics of a typical *n*-channel depletion MOSFET

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**Fig. 9.7-11:** Depletion MOSFET symbols (a) *n*-channel (b) *p*-channel

**Thank you**