

ELECTRONIC DEVICES

lecture 6

Field Effect Transistors (FETs)

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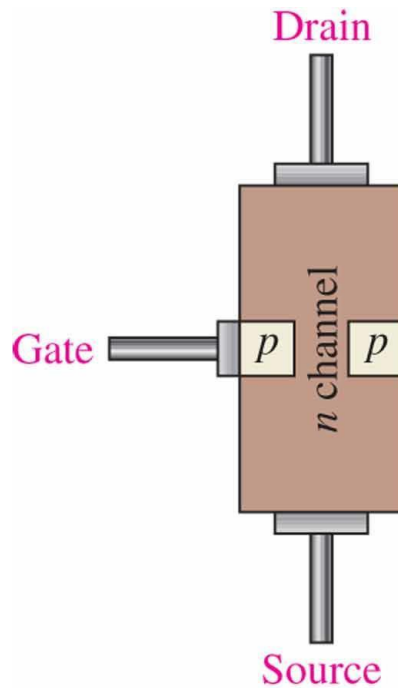
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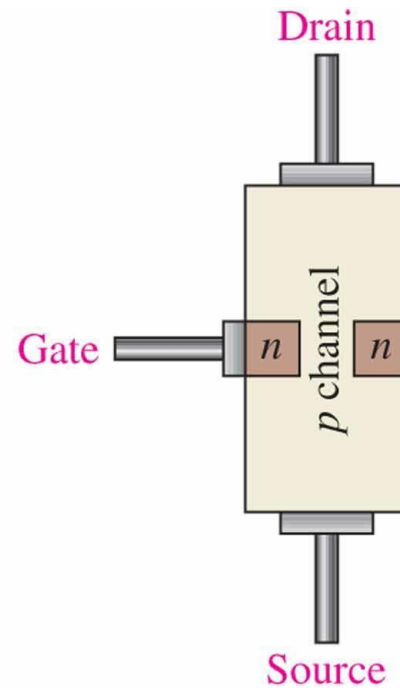
Outline

- The JFET
- basic structure of n-channel and p-channel JFETs
- basic operation of a JFET
- JFET Characteristics and Parameters
- drain characteristic curve
- transfer characteristic equation
- pinch-off voltage
- forward transconductance

JFET: Junction Field Effect Transistor



(a) *n* channel



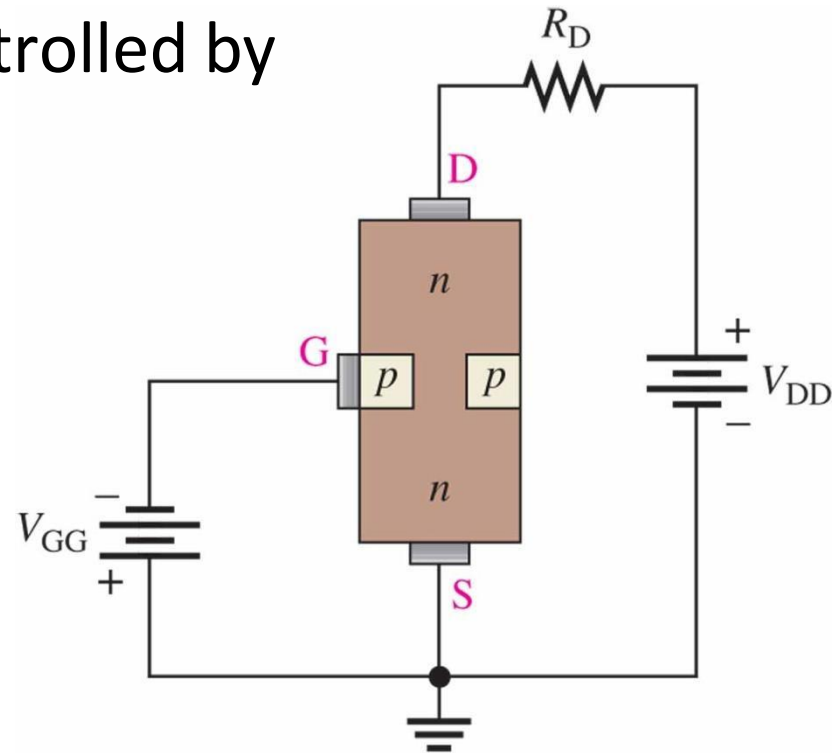
(b) *p* channel

A biased n -channel JFET

The JFET is always operated with the gate-source pn junction reverse-biased

DC Bias voltages

The channel width can be controlled by varying V_{GG}



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