JFET Device (H1)

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http://www.nhn.ou.edu/~bumm/ELAB/Lect_Notes/BJT_FET_transitors_v1_1

Notes on BJT & FET Transistors.

Comments.

The name *transistor* comes from the phrase "*trans*ferring an electrical signal across a res*istor*."

In this course we will discuss two types of transistors:

The **Bipolar Junction Transistor (BJT)** is an active device. In simple terms, it is a *current controlled* valve. The *base current* (I_B) controls the *collector current* (I_C).

The **Field Effect Transistor (FET)** is an active device. In simple terms, it is a *voltage controlled* valve. The *gate-source voltage* (V_{GS}) controls the *drain current* (I_D).

https://coefs.uncc.edu/dlsharer/files/2012/04/J3a.pdf

Junction Field Effect Transistor (JFET)

The single channel **junction field-effect transistor (JFET)** is probably the simplest transistor available. As shown in the schematics below (Figure 6.13 in your text) for the n-channel JFET (left) and the p-channel JFET (right), these devices are simply an area of doped silicon with two diffusions of the opposite doping. Please be aware that the schematics presented are for illustrative purposes only and are simplified versions of the actual device. Note that the material that serves as the foundation of the device defines the channel type.

http://www.ee.columbia.edu/~bbathula/courses/SSDT/lect11.pdf
http://www.ee.columbia.edu/~bbathula/courses/SSDT/lect12.pdf

Lecture-11
Junction Field Effect Transistors (JFET)

Introduction: The *field effect transistor*, or simply the FET is a three-terminal semiconductor device used extensively in digital and analog circuits. There are two types of such devices, the MOSFET and JFET, acronyms for the metal oxide semiconductor and junction field-effect transistors, respectively. In this lecture, we study about the characteristics and small signal model of the JFET. FET differs from the bipolar junction transistor in the following important characteristics:

1. Its operation depends upon the flow of majority carriers only. It is therefore, a *unipolar* (one type of carrier) device.
2. It is simpler to fabricate and occupies less space in integrated form.
3. It exhibits a high input resistance, typically many megaohms.
4. It is less noisy than bipolar device