

3.3 Comparison of MOSFET with JFET

BASIS OF COMPARISON	JFET	MOSFET
Acronym For	JFET stands for Junction Field Effect Transistor.	MOSFET stands for Metal Oxide Semiconductor Field Effect Transistor.
Operation	It can only be operated in the depletion mode	It can be operated in either depletion or in enhancement mode
Input Impedance	It has input impedance of ($\sim 10^8 \Omega$) which is very much lower than that of MOSFETs.	It has input impedance of ($\sim 10^{10} \Omega$ to $10^{15} \Omega$) which is very much higher than that of JFETs.
Gate Leakage Current	The gate leakage current of JFET is of the order of nanoAMPs (10^{-9} A).	The gate leakage current of MOSFET is in order of PicoAMPs (10^{-12} A).
Input Characteristics	The drain resistance of MOSFETs is lower than that of JFETs and therefore the output characteristics tend to be less flat (curved) than the JFETs.	The drain resistance of MOSFETs is lower than that of JFETs and therefore the output characteristics tend to be less flat than the JFETs.
Use	JFETs have been in use for a longer period of time and therefore they have slowly been replaced in many of its original use cases by more modern devices like the CMOS OpAmp.	MOSFETs are generally popular around the globe and therefore they have an important component in most of the integrated circuits.
Fabrication Process	JFETs are simpler to fabricate and thus they are very much available and cheaper in cost.	Addition of metal oxide layer to MOSFETs, make the fabrication process complex and sophisticated, therefore they are comparatively expensive to JFETs.
Application	JFETs are perfect for use in low noise applications such as electronic switches, buffer amplifiers etc.	MOSFETs are mainly used for high noise applications such as switching and amplifying analog or digital signals. Also, they are used in embedded systems and motor controlled applications.