Junction Field Effect Transistor Static Characteristics
Lab Work

This lab is related to obtaining the static transfer characteristics of a JFET. You shall be using the BF245C which is available in the lab.

a) Set up a circuit to observe the I_D vs V_{GS} curve of the JFET for a V_{DD} value to keep it in SAT.
b) Set up a circuit to observe the I_D vs V_{DS} curves of the JFET for different V_{GS} values.
c) Find the basic model parameters I_{DSS}, V_p, and Lambda from the curves that you have found. Explain how well the simple model that we use for the JFET explains the data that you have obtained. Where and how does it fail?

Note 1) You may use an oscilloscope-based circuit to obtain the curves automatically on the oscilloscope screen or you may obtain the curves manually point by point.

Note 2) We recommend that you get hold of the datasheet of BF245C beforehand to guide your work and also make sure you identify the leads correctly.

In writing your report explain what you have done (circuits, oscilloscope and/or multimeter connections, procedures, etc), what you have obtained (values, graphs, tables, screenshots, etc), and your comments. You are expected to upload your report to Moodle. To be eligible for this upload do not forget to show your results and set-up to your assistant and get his/her check.