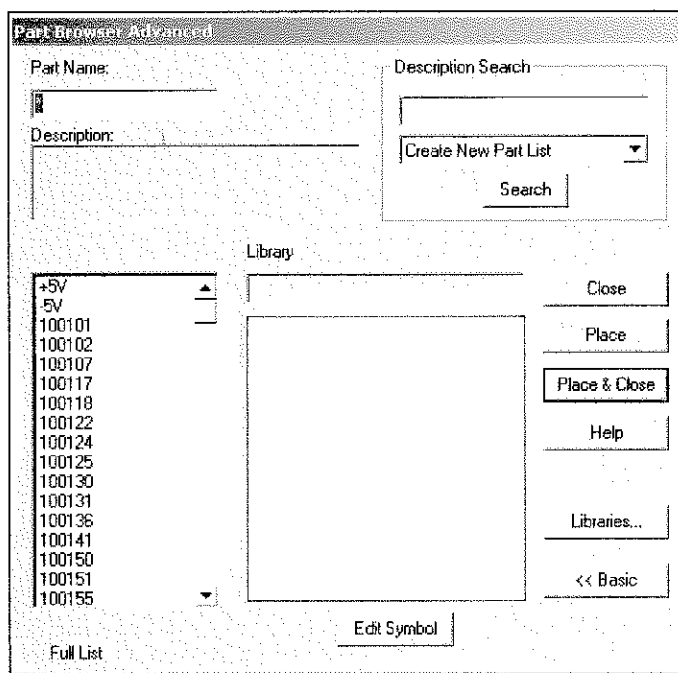


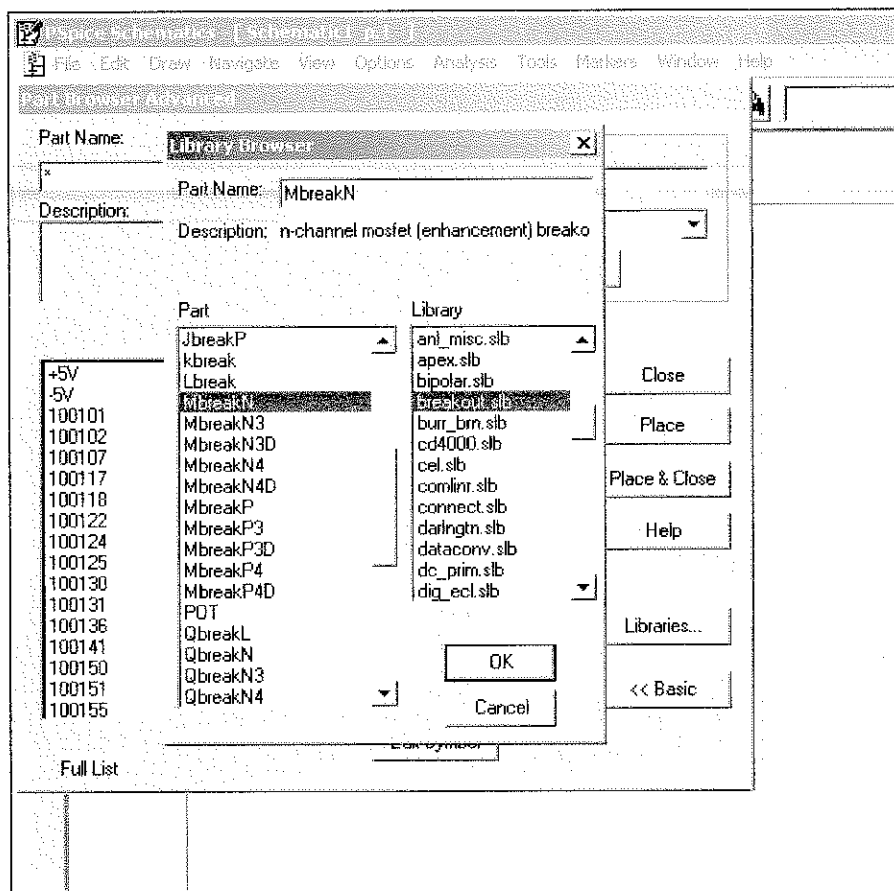
Setting up Enhancement mode MOSFET in PSPICE

1. In the **Schematics** window, click on **Draw** on the menu bar -> **Get New Part** . You will get the following dialog box

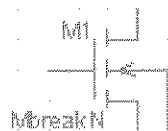


2. Select **Libraries** to get the following dialog box. Select **breakout.slb** library as shown in the image below.

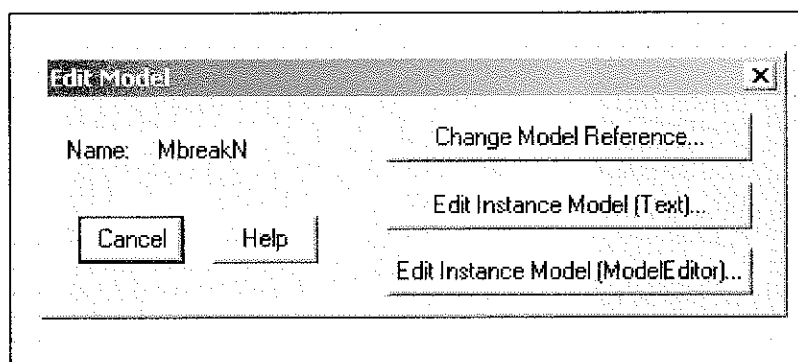
For Nmos Enhancement mode Select part **MbreakN** as shown
For Pmos Enhancement mode Select part **MbreakP**
Select **OK** and **Place & Close**



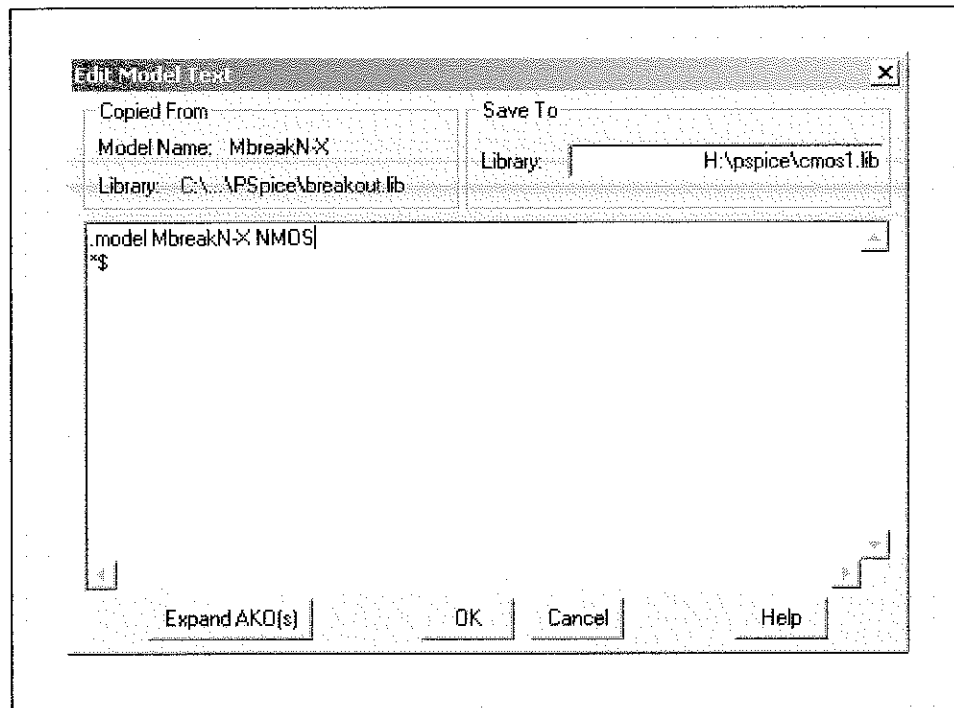
- Place the part at the desired location and select it as shown



- Select **Edit** from the menu bar and choose **Model** from the menu to get the following Dialog Box

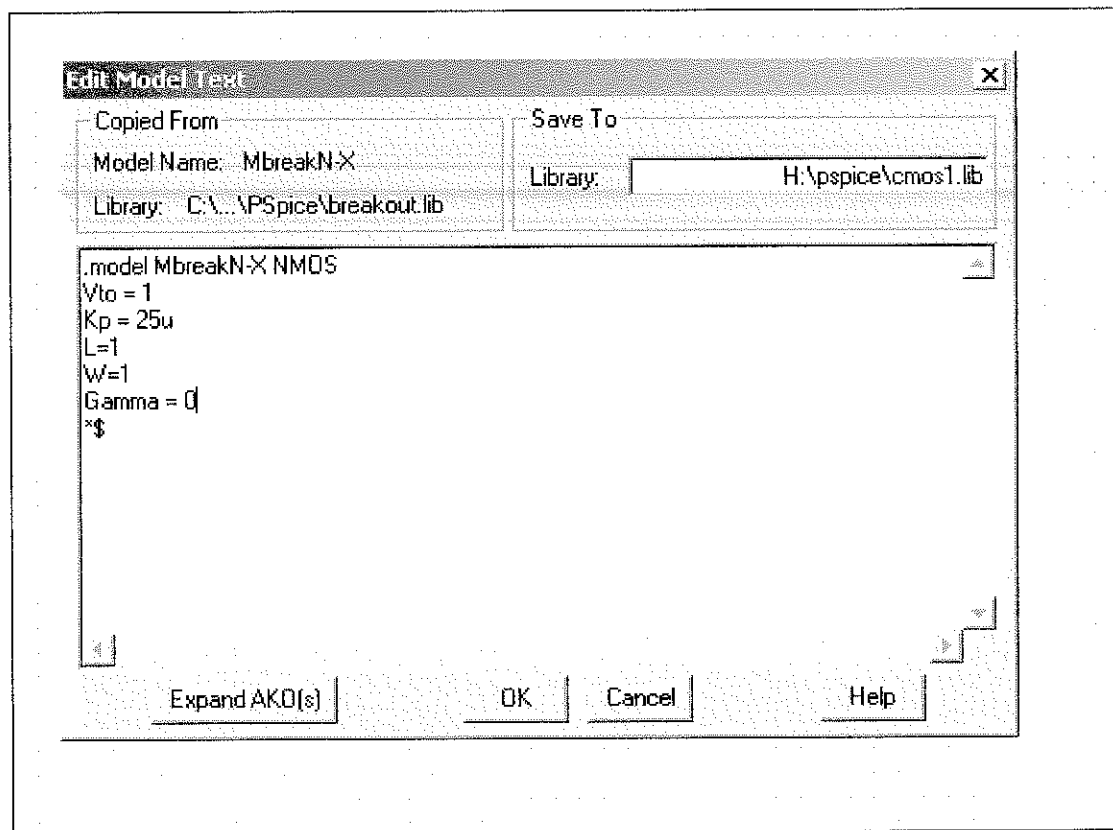


- Select **Edit Instance Model (Text)...** to get the following window



6. Type in the parameters you want to specify with the corresponding values
 Following parameters can be specified for a Enhance mode mosfet (These parameters are labeled exactly in the **same** manner for both **PMOS and NMOS**)
- (a) (a) Threshold Voltage as **$V_{to} = 1$**
 - (b) (b) Proportionality Constant **$K_p = 25u$**
 - (c) (c) Length **$L=1$**
 - (d) (d) Width **$W =1$**
 - (e) (e) γ **Gamma = 0**
 - (f) (f) ϕ **Phi = 0**

*The values given above and in the image below are just for understanding purpose. The actual values will depend on the problem you are trying to solve. You do not need to specify all the parameters, only the ones required by the problem. There are more parameters which can be specified for a MOS. But those are beyond the scope of this course.



7. Select **OK** after typing in the values of the required parameter and build the rest of the circuit.

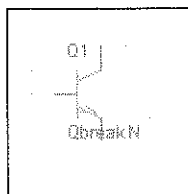
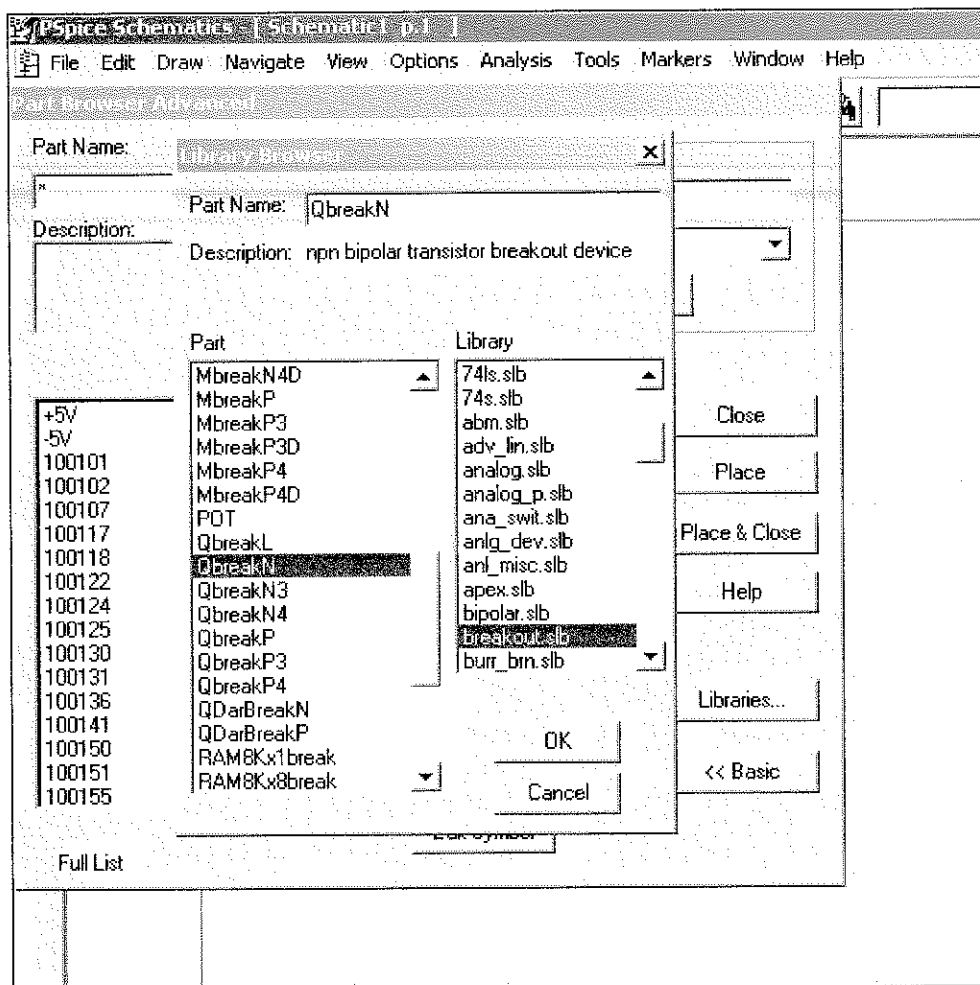
Setting up BJT in PSPICE

The steps to setup BJT are almost same as that of MOSFET with following changes:

In step 2, after selecting "**Breakout.slb**" library choose

QbreakN for npn transistor

QbreakP for pnp transistor



The parameters that can be specified for a BJT are as follows:

- (g) β as **BF = 200**
- (h) Reverse Saturation Current **IS = 1e-15**
- (i) Early Voltage **VA = 130**

