Defining parameters of a transistor model in PSPICE

Amit Vishnipolsky
School of Electrical Engineering
Tel Aviv University

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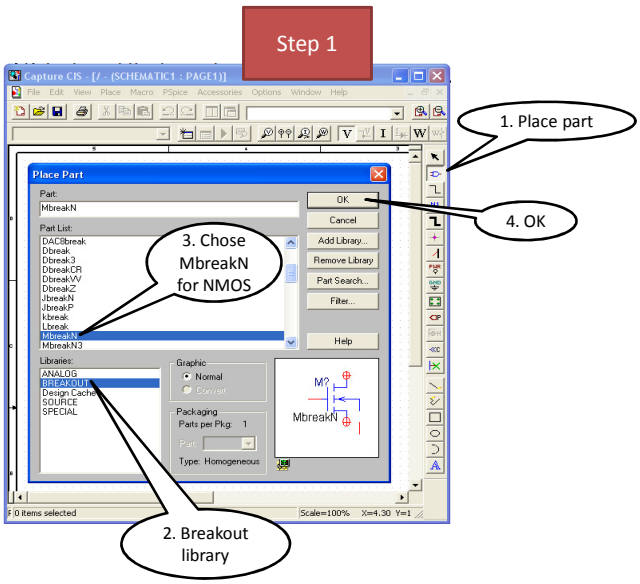
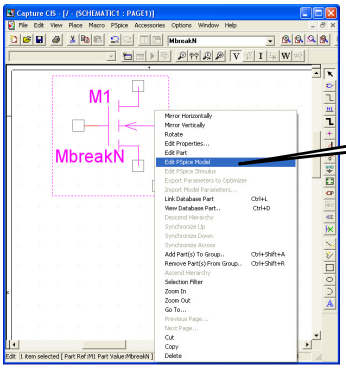
Placing an Mbreak transistor



2

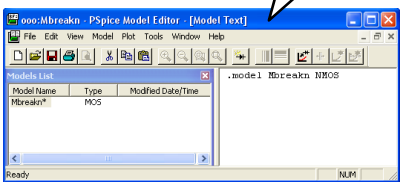
Transistor's parameters Definition



Step 2

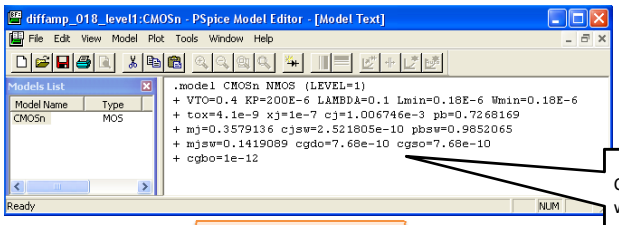
1. Right click on the transistor you have placed
2. Click on Edit PSpice Model

3. Now the following window will be opened



3

Transistor's parameters Definition



Step 3

Copy the text from here, replace it with the previous one (previous page) and save. After you save, the transistor's name will be : CMOSn.

For a PMOS

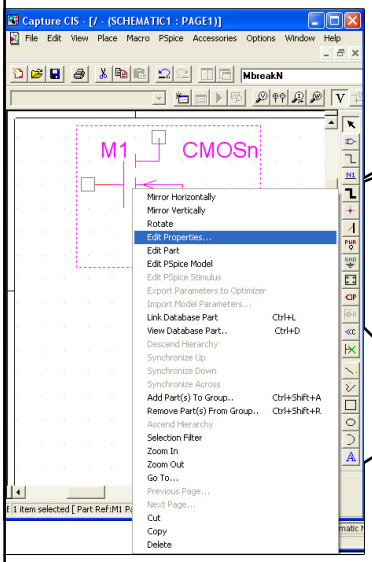
Same steps are made for the PMOS transistor definition. However, you must do the following modifications:

1. In the BREAKOUT library (step 1): chose MbreakP instead of MbreakN.
2. In step 3 copy the following text to the model editor window and save:

.model CMOSp PMOS (LEVEL=1)
+VTO=-0.4 KP=100E-6 LAMBDA=0.1 Lmin=0.18E-6 Wmin=0.18E-6
+tox=4.1e-9 xj=1e-7 cj=1.16515e-3 pb=0.8767128 mj=0.4217567
+cjsw=2.212673e-10 pbsw=0.6412086 mjsw=0.3264924
+cgdo=6.76e-10 cgso=6.76e-10 cgbo=1e-12

4

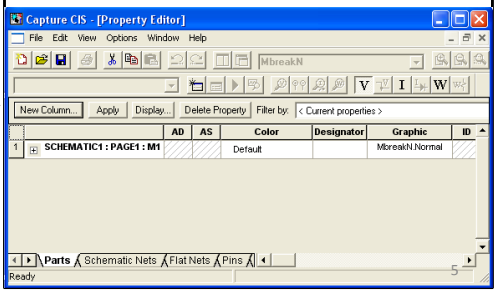
Defining W and L



Step 4

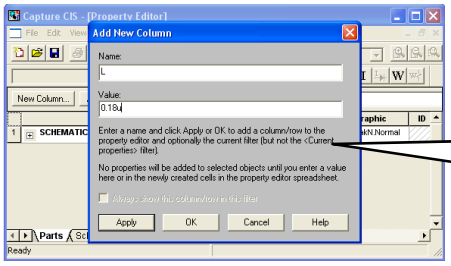
1. Right click on the transistor
2. Click on Edit Properties

It will open the following window



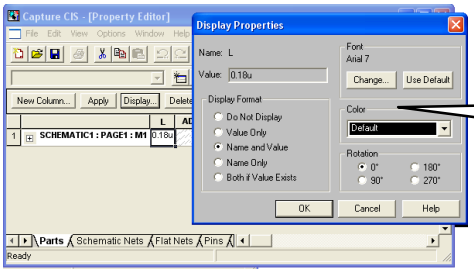
5

Defining W and L



Step 5

1. Click New Column
2. Write:
   Name : L
   Value : 0.18u
3. Click on OK



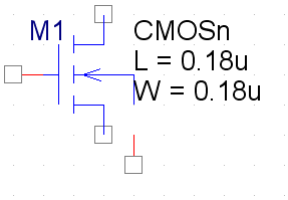
Step 6

1. Click on the column L
2. Click on Display
3. Mark, Name and Value and OK
4. Exit Property Editor

6

Defining W and L

- Repeat on steps 5 and 6, for the definition of W.
- All you need to change is W.
- The final outcome is the following transistor.
- You can change W and L if necessary by clicking on them.
- It is advised to define a single transistor and copy/paste the rest.



Good luck

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