MSOE Library Device Usage

Last modified 12/21/23
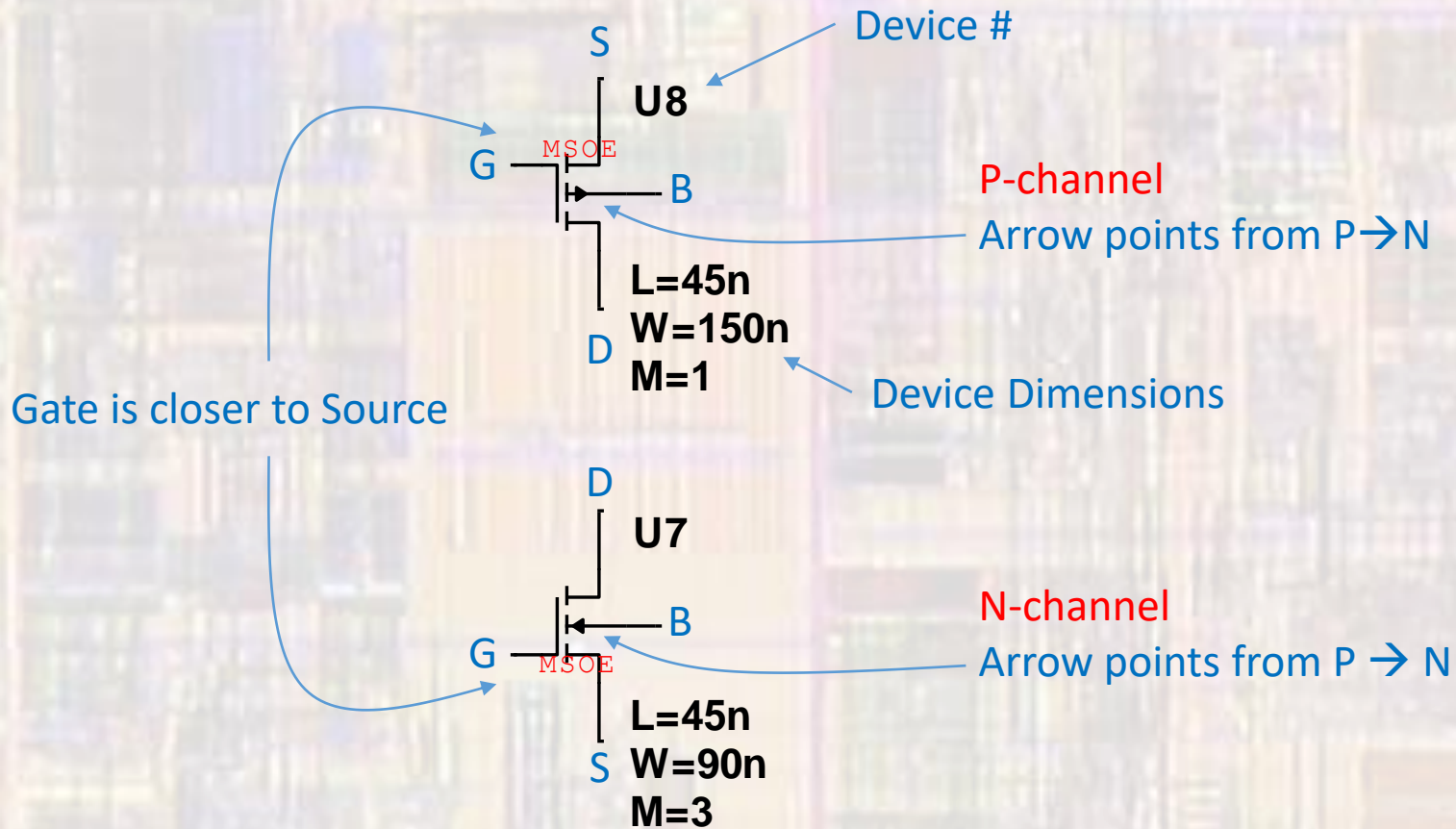
MSOE Library Device Usage

- 2 Devices
  - MSOE_NMOS_45NM
  - MSOE_PMOS_45NM

- Minimum Dimensions
  - Lmin = 45nm
  - Wmin = 90nm

- Allowed Dimensions
  - L is not allowed to vary from Lmin
  - W may grow in 5nm increments

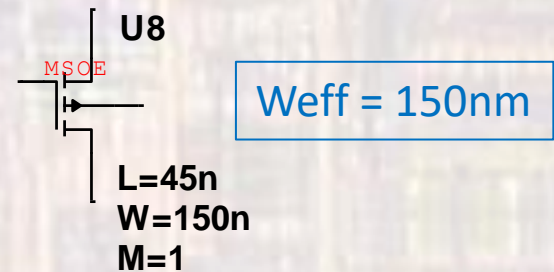The tool does not enforce these restrictions – you must do this

MSOE Library Device Usage

- ## Device Orientation

S

Device #

U8

MSOE

G

B

P-channel
Arrow points from P➔N

L=45n
W=150n
M=1

D

Device Dimensions

Gate is closer to Source

D

U7

G

MSOE

B

N-channel
Arrow points from P ➔ N

L=45n
W=90n
M=3

S

MSOE Library Device Usage

- Changing W – method 1
  - Double click on the device and select the Value tab
  - Double click on the Width value and change it to the desired width
    - Remember 5nm increments only

U8

MSOE

Weff = 150nm

L=45n
W=150n
M=1

- Changing W – method 2
  - Double click on the device and select the Value tab
  - Double click on the Multiplicity value and change it to the desired number of "stripes" of the given width
    - This is effectively putting multiple transistors in parallel → no change in L but N*W for the effective W

U7

MSOE

Weff = 270nm

L=45n
W=90n
M=3