Finishing Up

Boris Murmann bmurmann@hawaii.edu

Pull Request Contents

EE628/5_Design/4_Layout/Team X

TeamX.oas → Top level layout, contains all layout cells

TeamX.spice → Top level spice netlist for LVS

TeamX_sim.spice → Top level spice netlist for simulation

TeamX.sym → Top level symbol

TeamX.readme → Pin list + any notes you want to convey

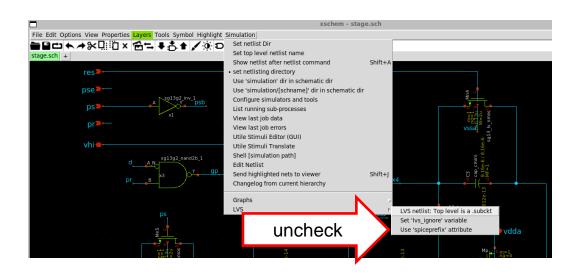
TeamX_logo.oas → In case you want to include a logo

Netlist Creation

File Edit Options View Properties Layers Tools Symbol Highlight Simulation Set top level netlist name Show netlist after netlist command Shift+A set netlisting directory Use 'simulation' dir in schematic dir Use 'simulation/[schname]' dir in schematic dir Configure simulators and tools List running sub-processes View last job data View last job errors Utile Stimuli Editor (GUI) Utile Stimuli Translate Shell [simulation path] Edit Netlist Send highlighted nets to viewer Shift+I Changelog from current hierarchy LVS LVS netlist: Top level is a .subckt Set 'lvs_ignore' variable ✓ Use 'spiceprefix' attribute

For simulation (default):

For LVS:



Netlist Examples

```
* For simulation
.subckt my_inv A VDD VSS Y

XX1 Y A VSS VSS sg13_lv_nmos w=740.00n l=130.00n ng=1 m=2

XX0 Y A VDD VDD sg13_lv_pmos w=1.12u l=130.00n ng=1 m=2
.ends
```

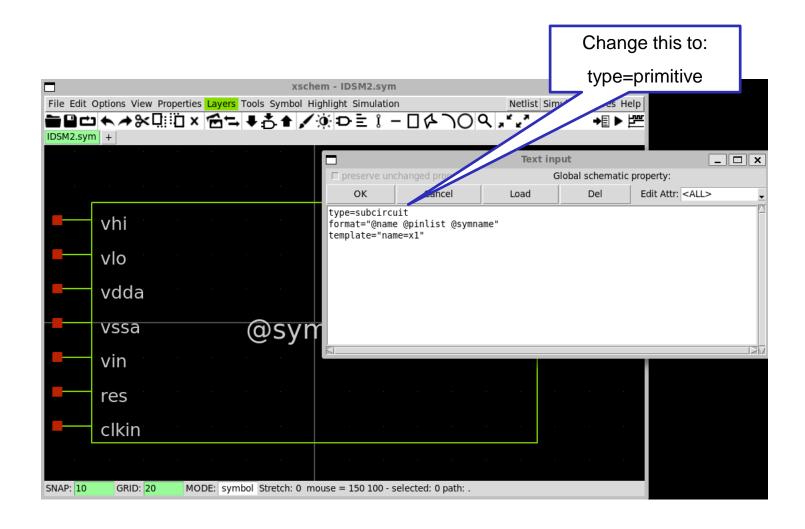
```
* For LVS
```

```
.subckt my_inv A VDD VSS Y

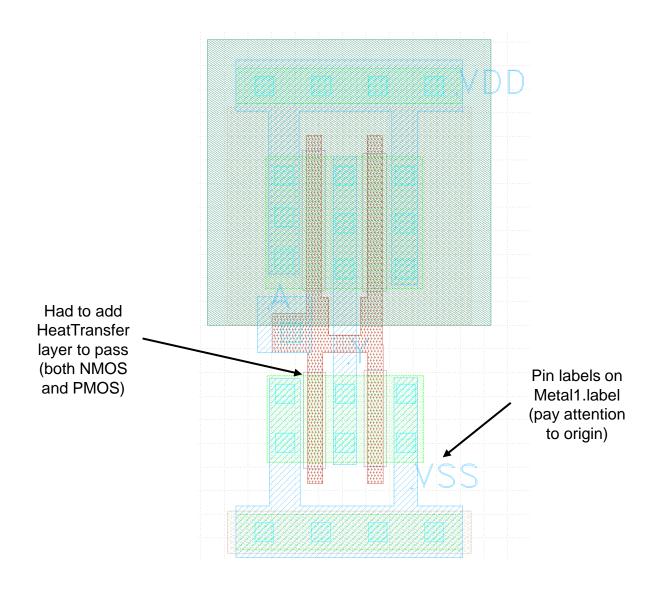
MX1 Y A VSS VSS sg13_lv_nmos w=740.00n l=130.00n ng=1 m=2

MX0 Y A VDD VDD sg13_lv_pmos w=1.12u l=130.00n ng=1 m=2
.ends
```

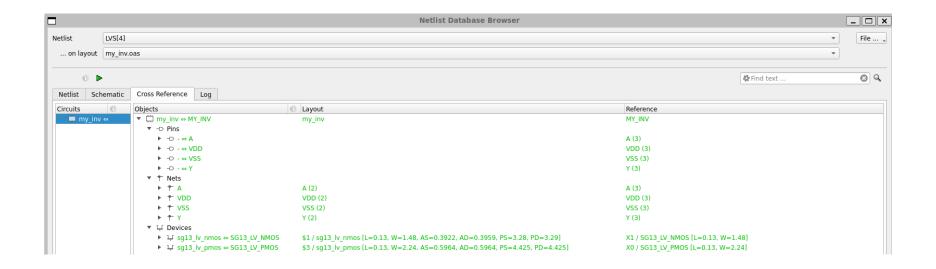
Your Top-Level Symbol



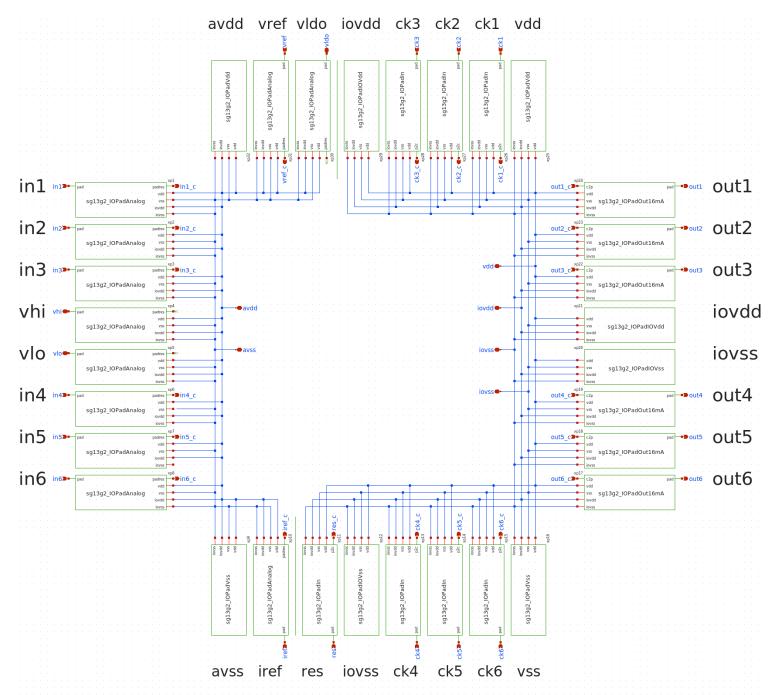
LVS with Standard Cell Inverter



LVS Output



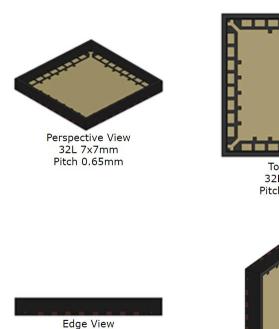
- Be sure to check option "devices combine"
- Click on nets and devices to visualize them in the layout



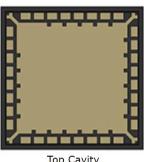
Tentative Package

M-QFN32W.65 Open Cavity

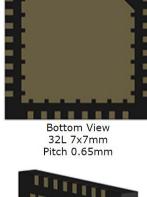
Click Images to Enlarge



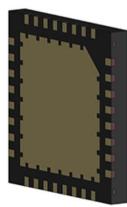
32L 7x7mm Pitch 0.65mm



Top Cavity 32L 7x7mm Pitch 0.65mm







Bottom View 32L 7x7mm Pitch 0.65mm

https://www.mirrorsemi.com/M-QFN32W.65.html

32L 7x7mm

Pitch 0.65mm

Bonding Diagram (To Be Completed)

TOP VIEW

