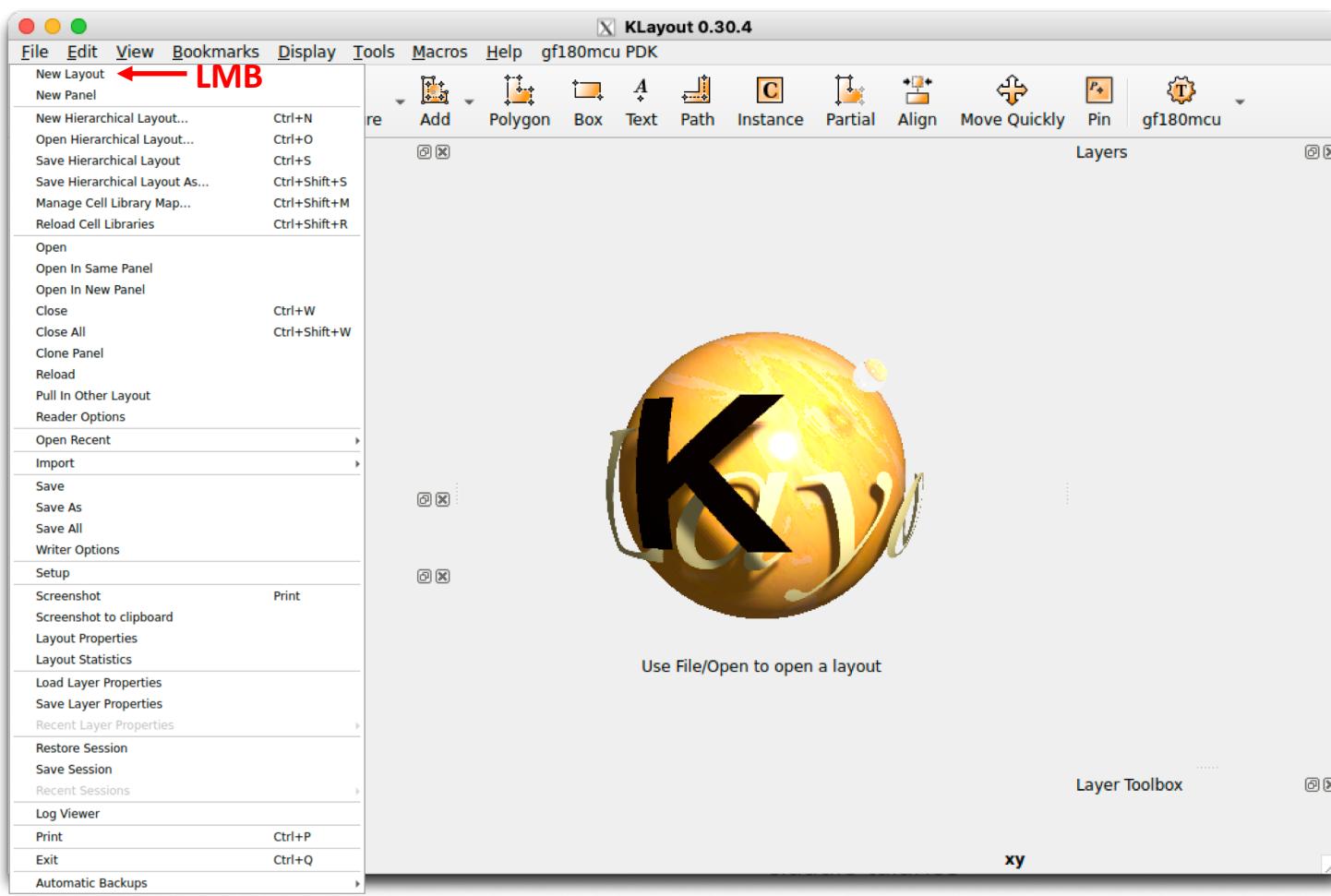


Systematic Design of Analog CMOS Circuits with LUTs using open-source tools and PDKs

Part II (b)

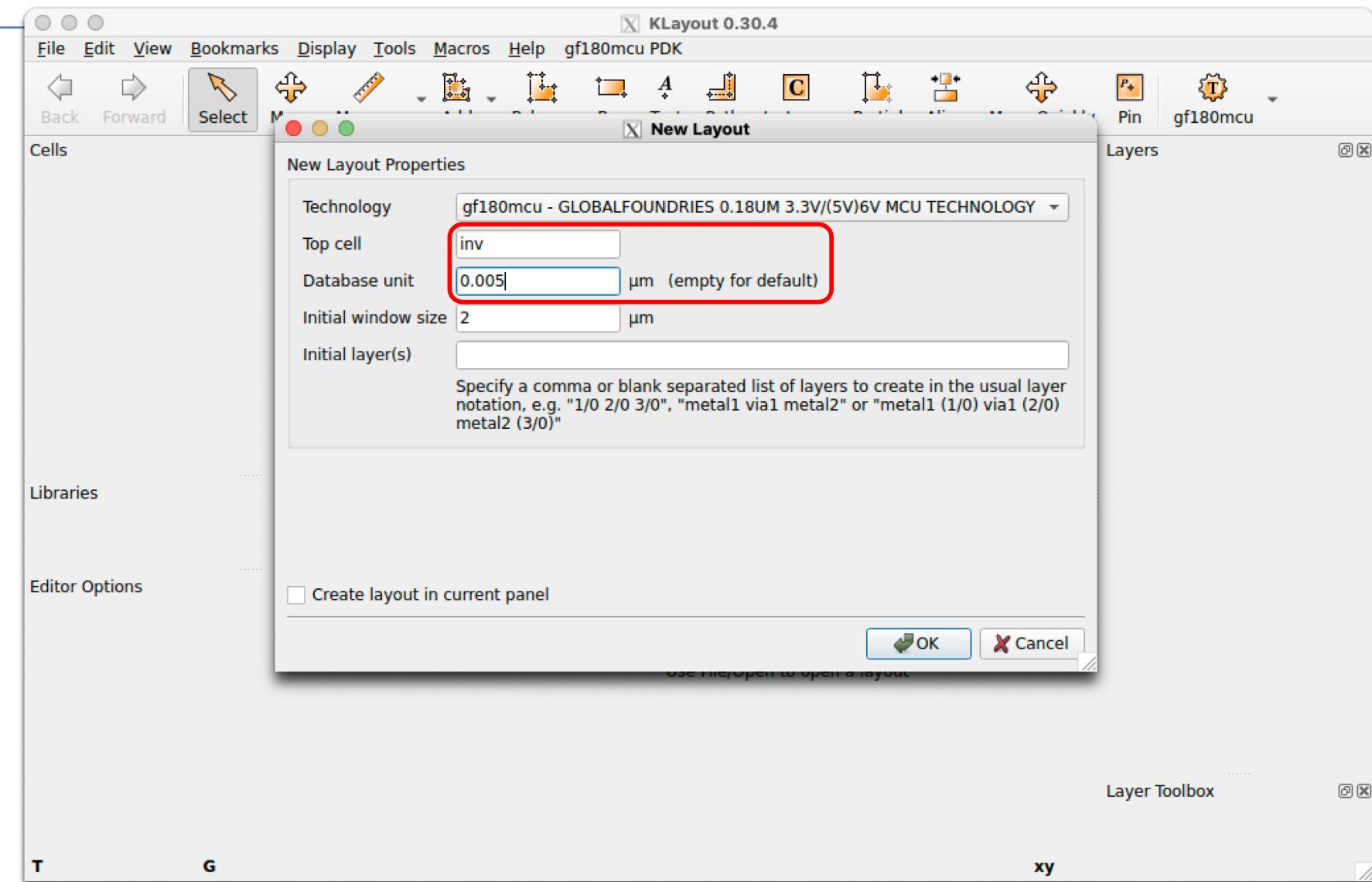
Modify the layout to look more “conventional”

```
/foss/designs/gf180-2025/ring > mv inv.gds inv_orig.gds  
/foss/designs/gf180-2025/ring > ke -l gf180mcu_PK.lyp
```



2025.09
or
2025.07

New Layout Properties



Design Geometry Rules

- https://gf180mcu-pdk.readthedocs.io/en/latest/physical_verification/design_manual/drm_07_02.html

7.1 Design Geometry Rules

Design Geometry Rules	
Rule No.	Description
GRID	The design grid must be an integer multiple of 0.005μm.
OFFGRID	All edge boundaries must be snapped to the grid defined above.
ACUTE	All shapes must be orthogonal or on a 45° unless otherwise stated.

Layout Information

- https://gf180mcu-pdk.readthedocs.io/en/latest/physical_verification/design_manual/drm_03.html

3.0 Layout Information

3.1 The layout rules defined in this document are expressed in microns (μm).

3.2 All drawn dimensions are the same as the finished silicon dimensions.

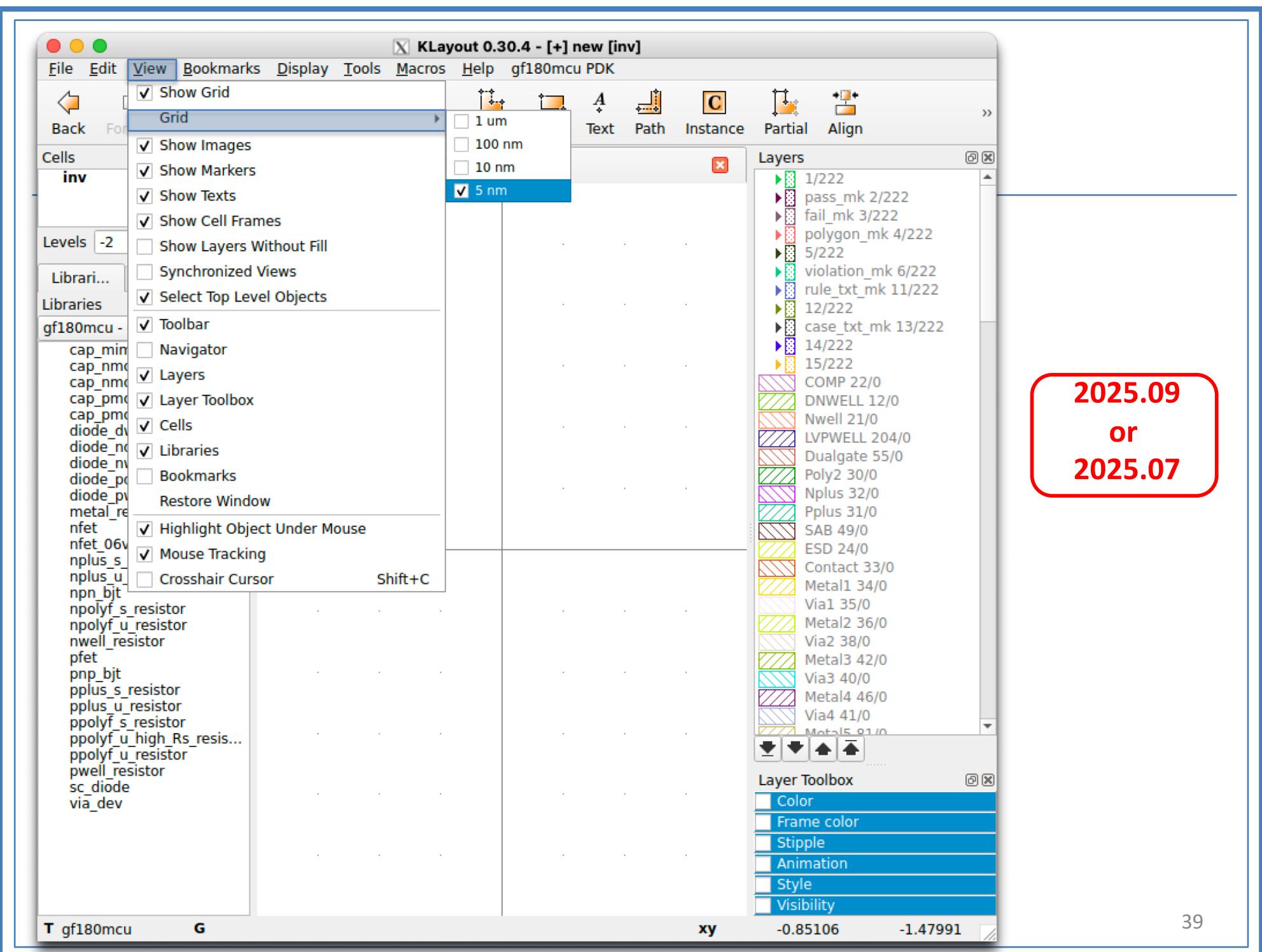
3.3 There should not be any notches of geometry smaller than the allowed minimum spacing.

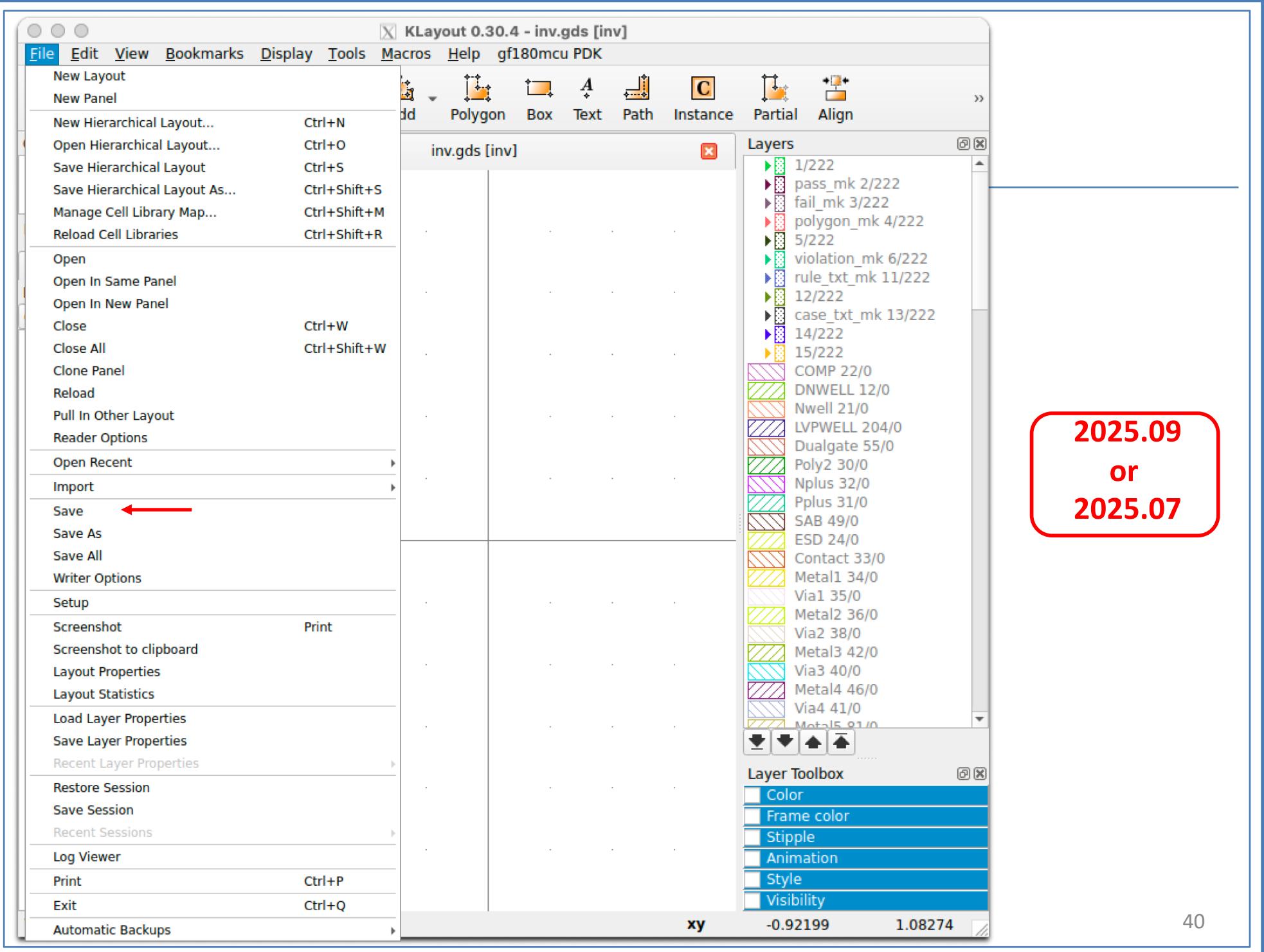
3.4 Consistent layout all designs on a $0.005\mu\text{m}$ grid will avoid off-grid and snapping issues during database fracturing.

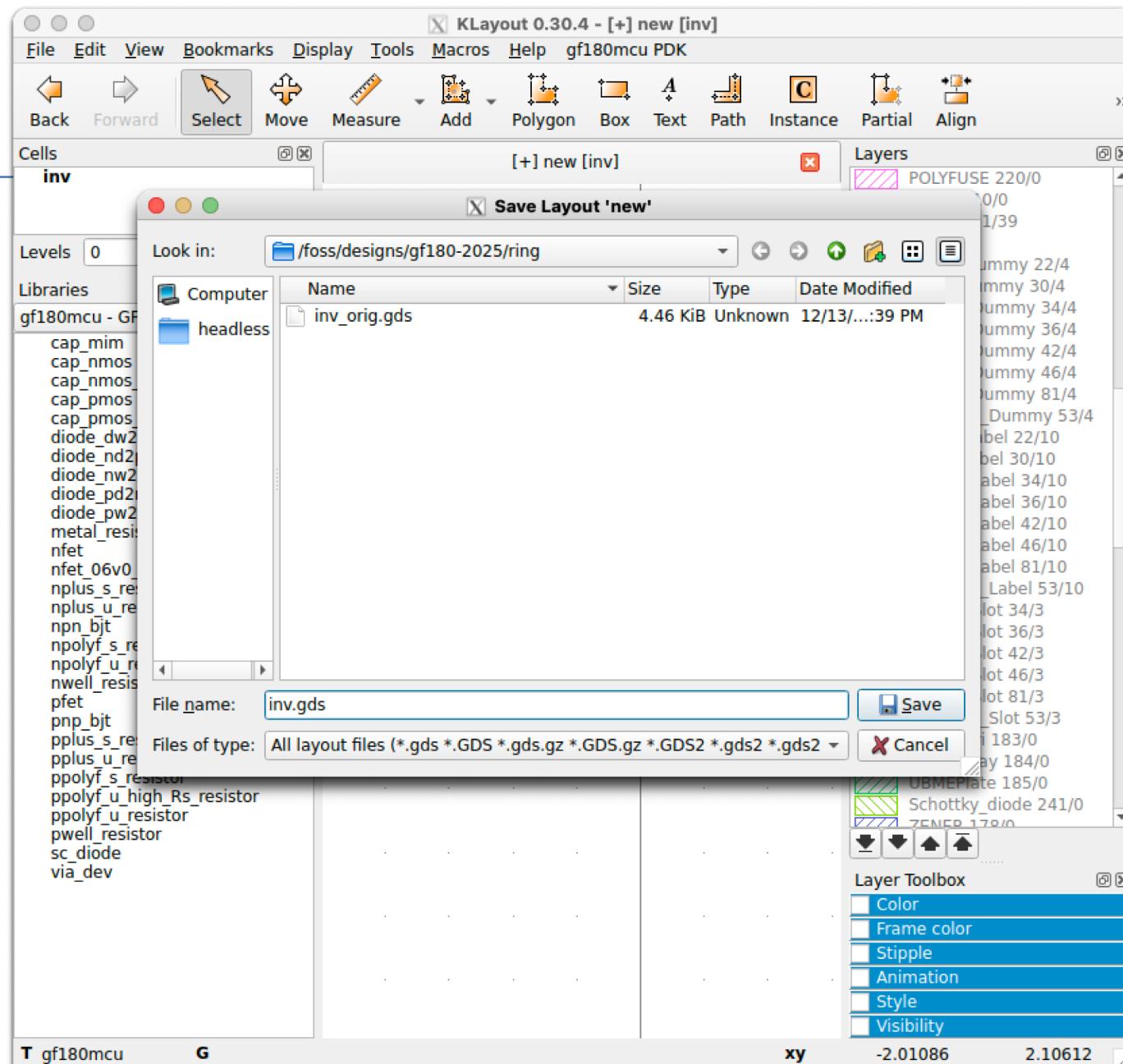
3.5 All drawings and schematics in this document are not drawn to scale.

3.6 Only 90 deg and 45 deg bends are allowed for poly and metal lines.

3.7 All dimensions in this document are considered minimum unless otherwise stated.

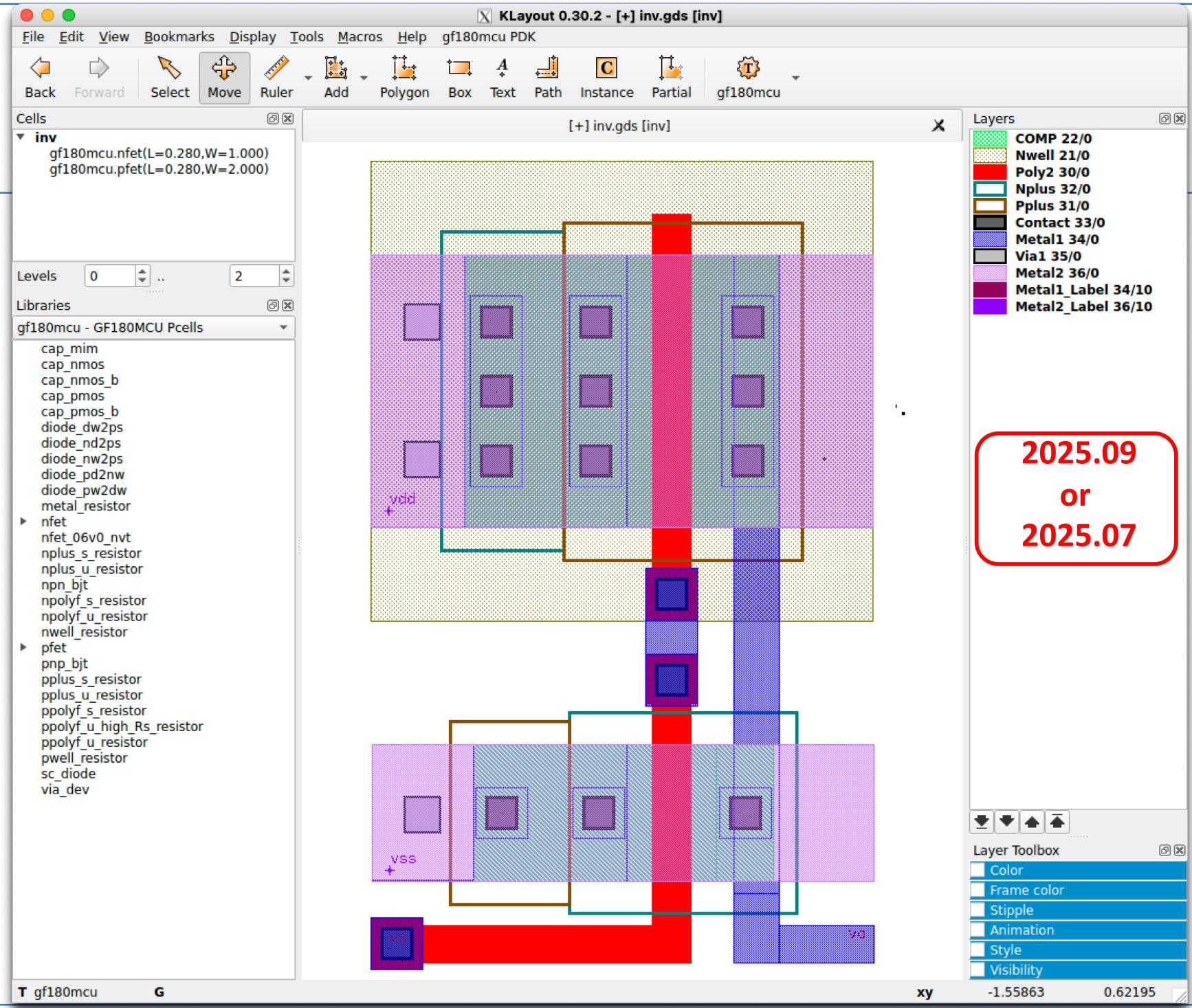




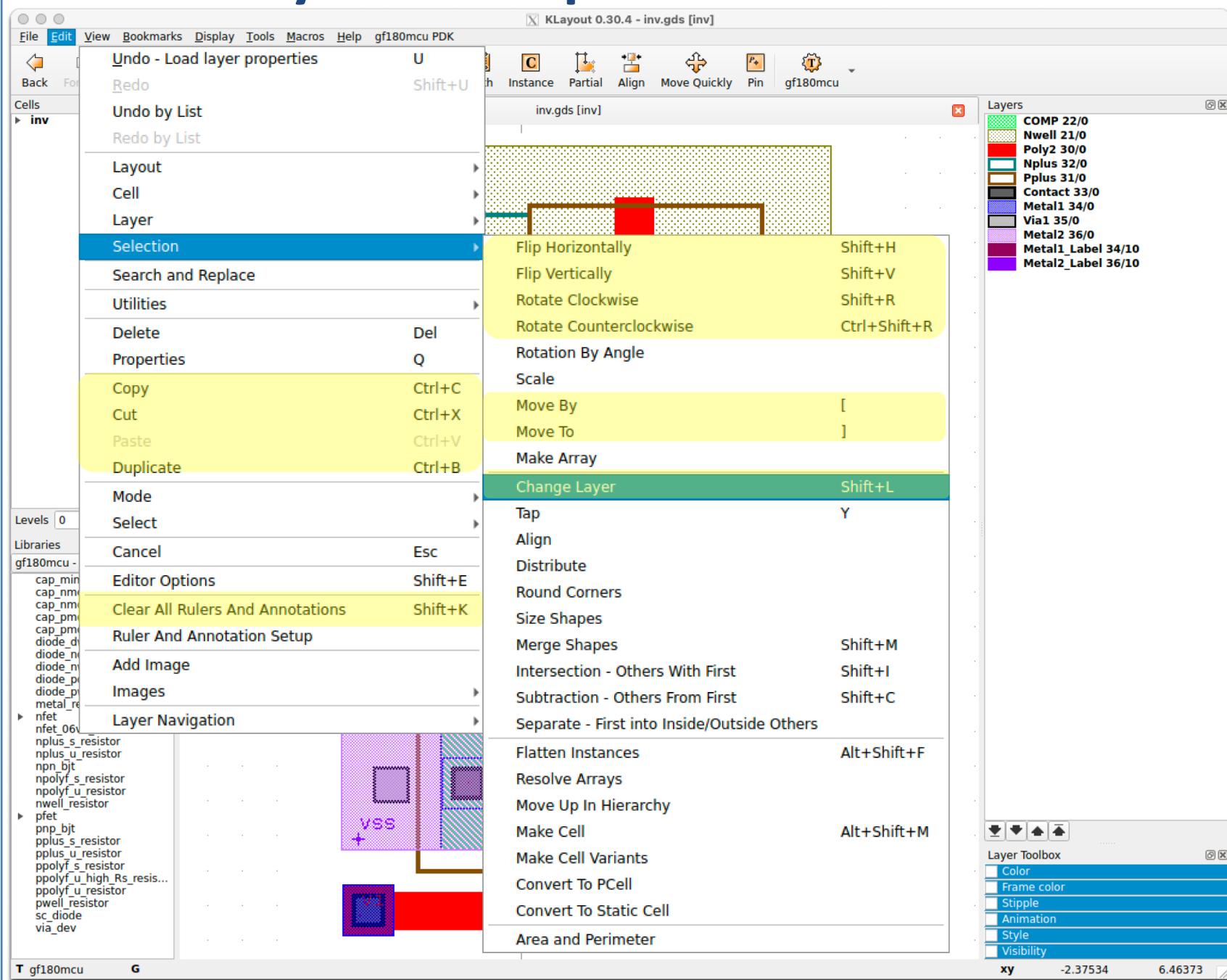


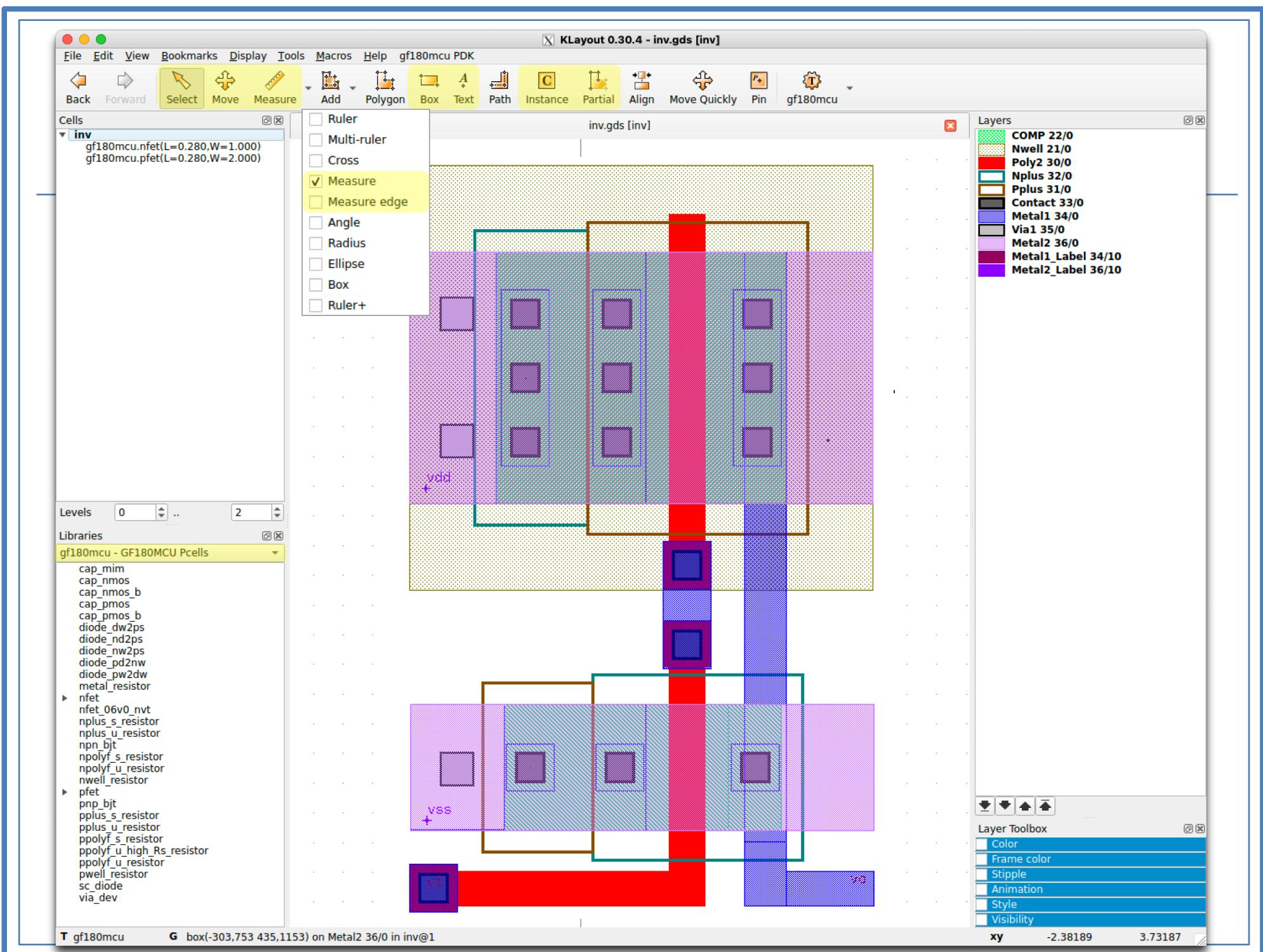
2025.09
or
2025.07

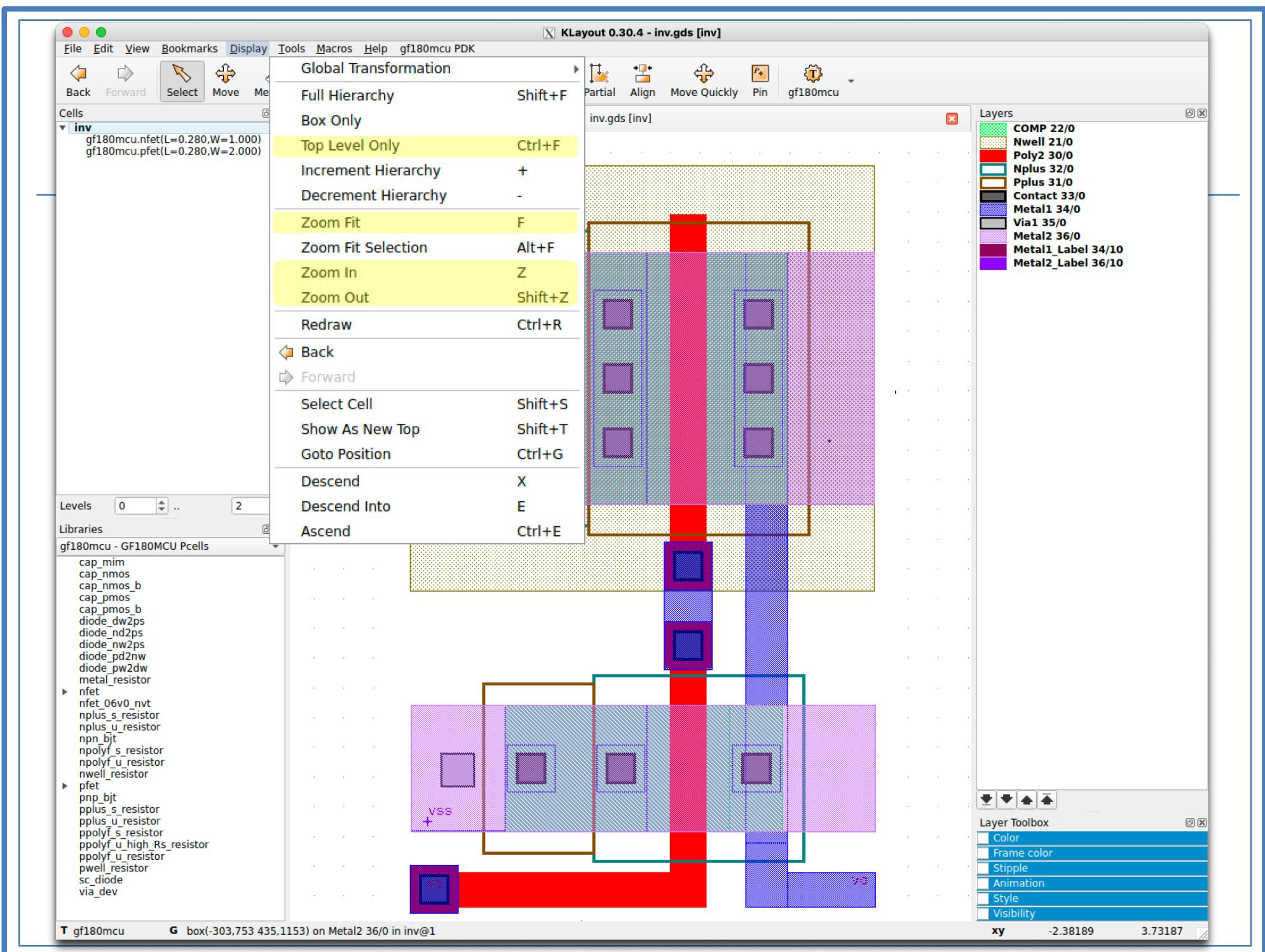
/foss/designs/gf180-2025/ring > ke -l gf180mcu_PK.lyp inv.gds



KLayout's frequent Edit commands







DRC

2025.09
or
2025.07

