

EECT/CE 6325 VLSI Design

SAR ADC Logic Controller

Creating Cell library

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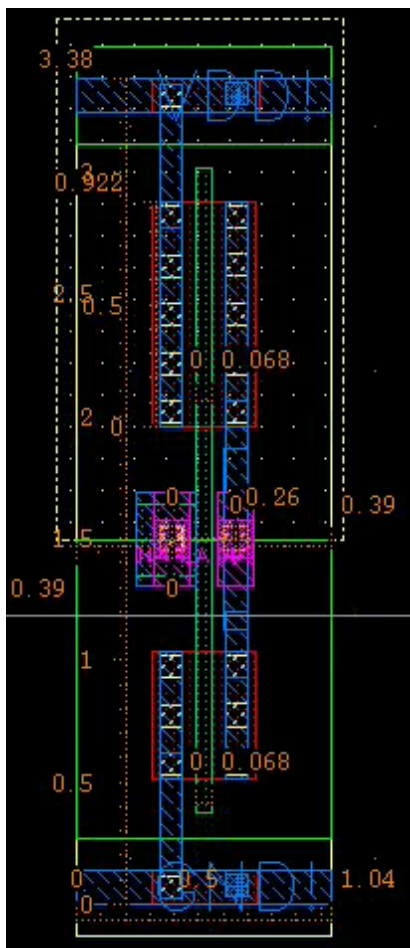
Report Results

Gate list: inv, nand2, nand3, nor2, nor3, xor2, oai12, oai22, aoi22

Included layouts,schematics, abstracts,drc,lvs,hspice,lengths,widths, netlists, and combined library at the end

INV

Cell layout

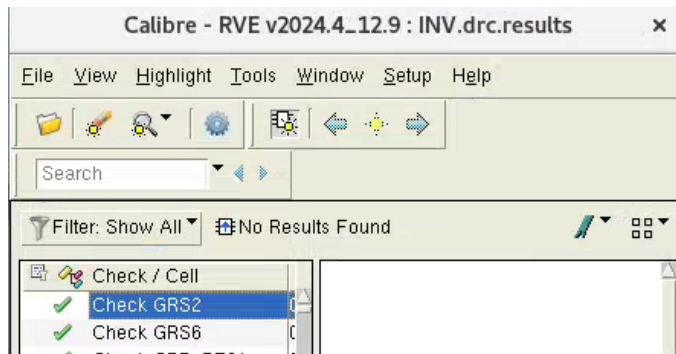


Width = 1.04

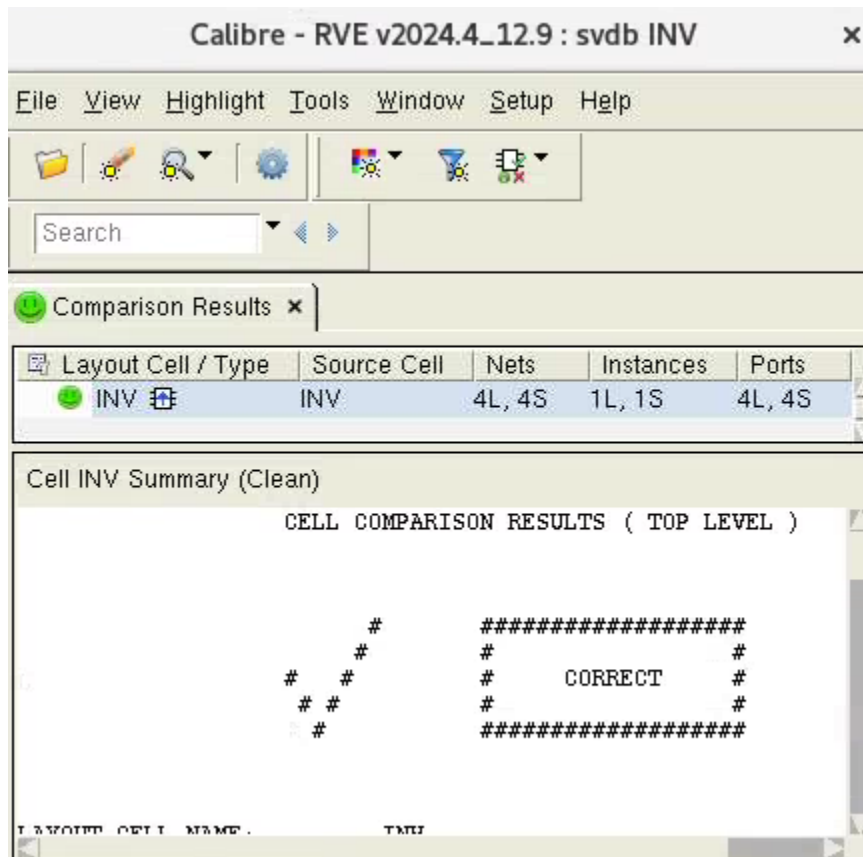
Height= 3.38

Area = 3.5152

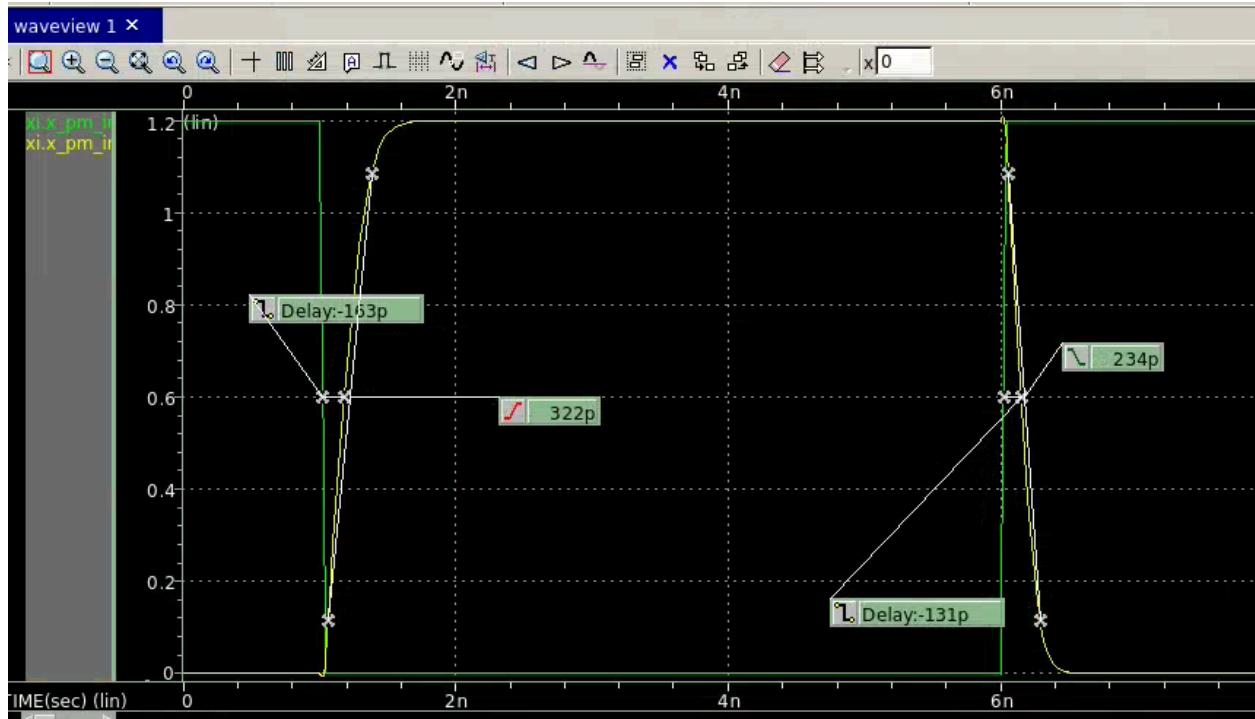
DRC



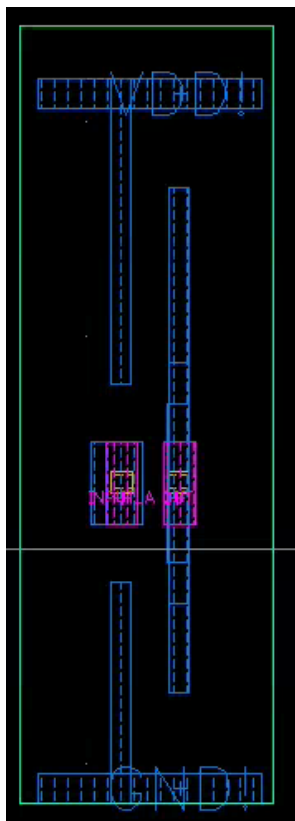
LVS



Waveform

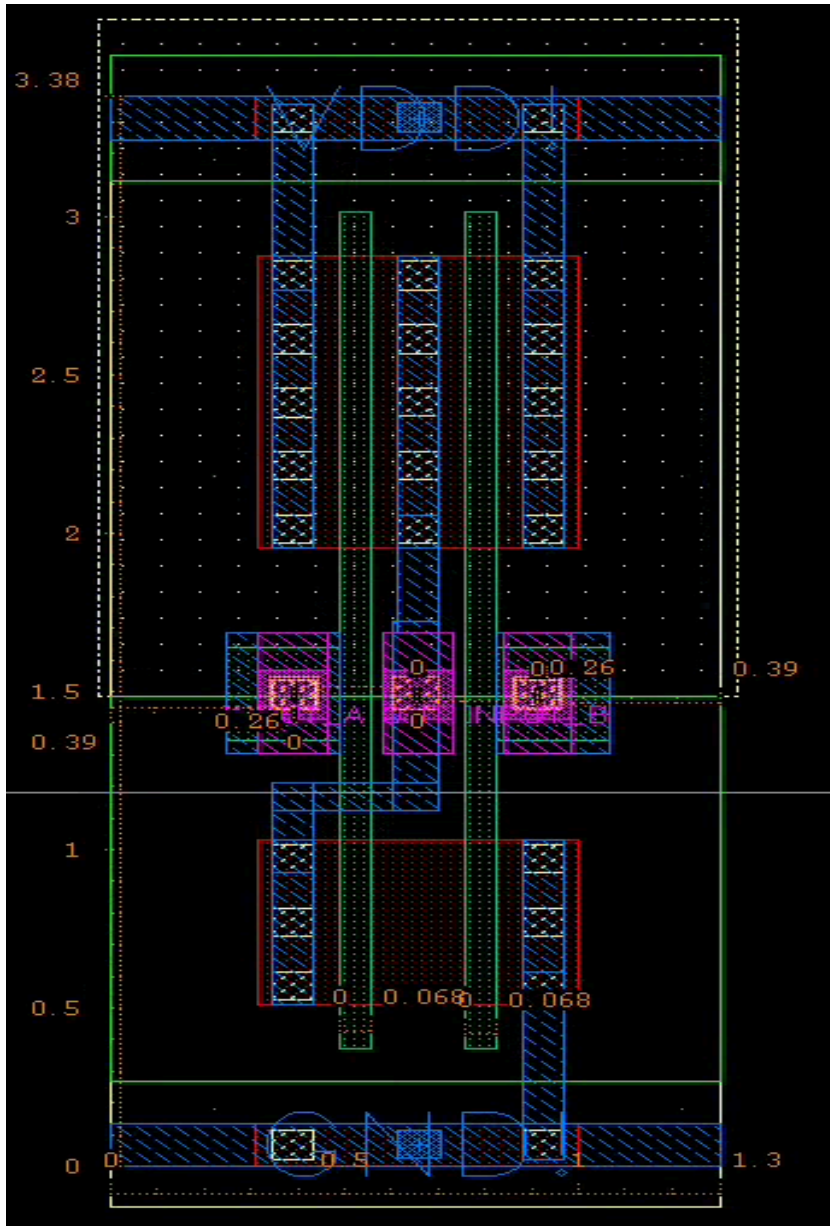


Abstract



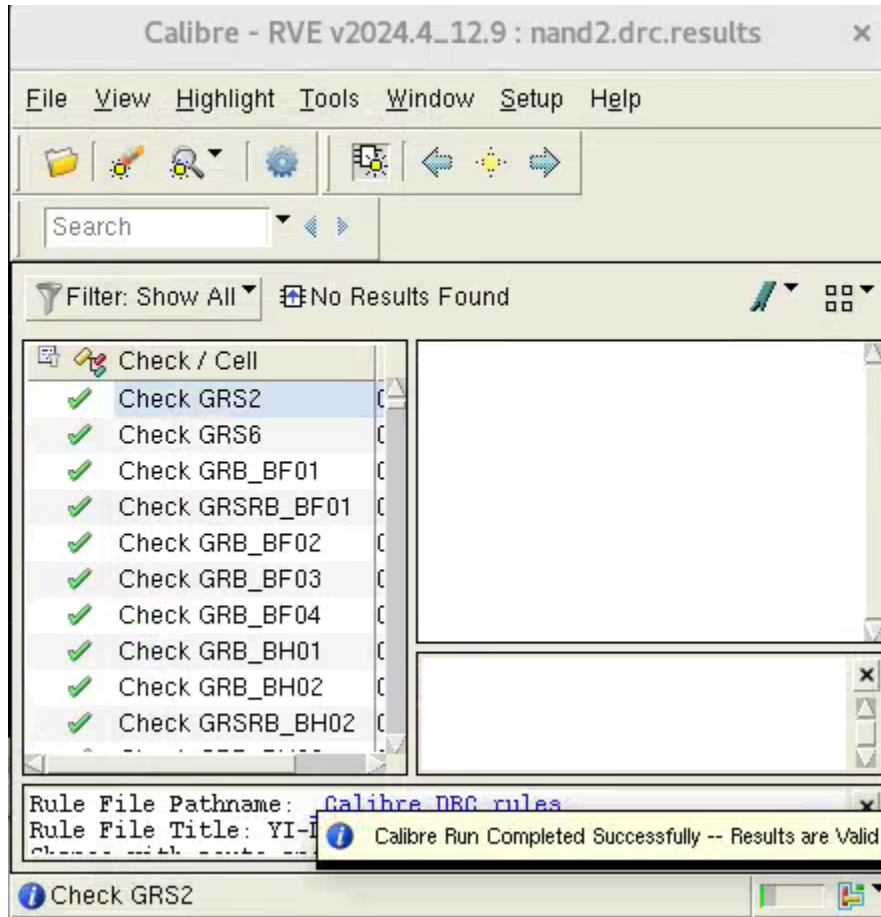
nand2

Cell layout

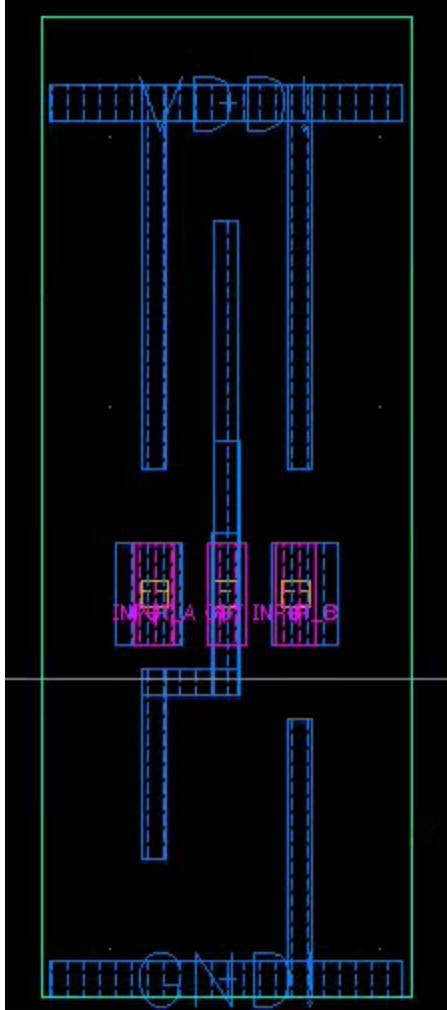


Width = 1.3
Height = 3.38
Area = 4.394

DRC

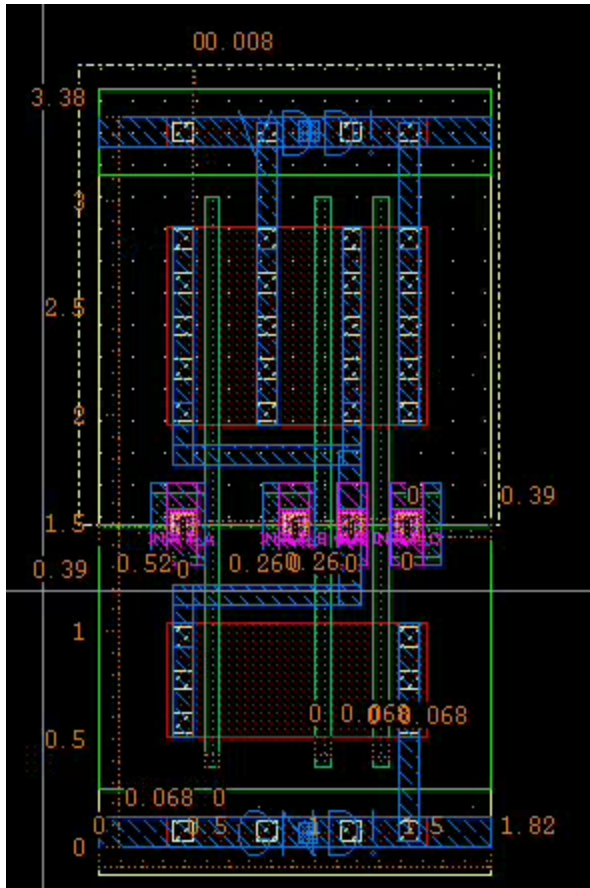


LVS



nand3

Layout



Width = 1.82
Height = 3.38
Area = 6.1516

DRC

Execution Date/Time: v2
 Calibre Version: v2
 Rule File Pathname: YI-D
 Rule File Title: NA
 Layout System: G
 Layout Path(s): NA
 Layout Primary Cell:
 Current Directory: /jra
 User Name: jra
 Maximum Results/RuleCh
 Maximum Result Vertices
 DRC Results Database:
 Layout Depth: AL
 Text Depth: PR
 Summary Report File:
 Geometry Flagging:
 Excluded Cells: NONSIM
 CheckText Mapping:
 Layers: MEM
 Keep Empty Checks:
 --- RUNTIME WARNINGS ---
 Cell name FILLDGCAPTIE
 Cell name FILLDGCAPTIE
 Cell name FILLDGCAPTIE
 Cell name FILLDGCAPTIE

Calibre - RVE v2024.4.12.9 : NAND3.drc.results

File View Highlight Tools Window Setup Help

Filter: Show All No Results Found

Check / Cell	Result
Check GRS2	✓
Check GRS6	✓
Check GRB_BF01	✓
Check GRSB_BF01	✓
Check GRB_BF02	✓
Check GRB_BF03	✓
Check GRB_BF04	✓
Check GRB_BH01	✓
Check GRB_BH02	✓
Check GRSB_BH02	✓

Rule File Pathname: Calibre DRC rules
 Rule File Title: YI-D
 Calibre Run Completed Successfully -- Results are Valid

LVS

```

##          ##
#####

PORT FILE NAME:  NAND3.lvs.report
YOUT NAME:      NAND3.sp ('NAND3')
SOURCE NAME:    NAND3.src.net ('NAND3')
RULE FILE:      _Calibre_LVS_rules_
GENERATION TIME: Wed Nov 5 23:09:52 2025
CURRENT DIRECTORY: /home/eng/jj/jra190000/cad/gf6
USER NAME:      jra190000
LIBRE VERSION:  v2024.4.12.9 Tue Oct 1 20:34:

OVERALL COMPARISON RESULTS

# #####
# # * *
# # # CORRECT # |
# # # #
# #####
  
```

Calibre - RVE v2024.4.12.9 : svdb NAND3

File View Highlight Tools Window Setup Help

Comparison Results

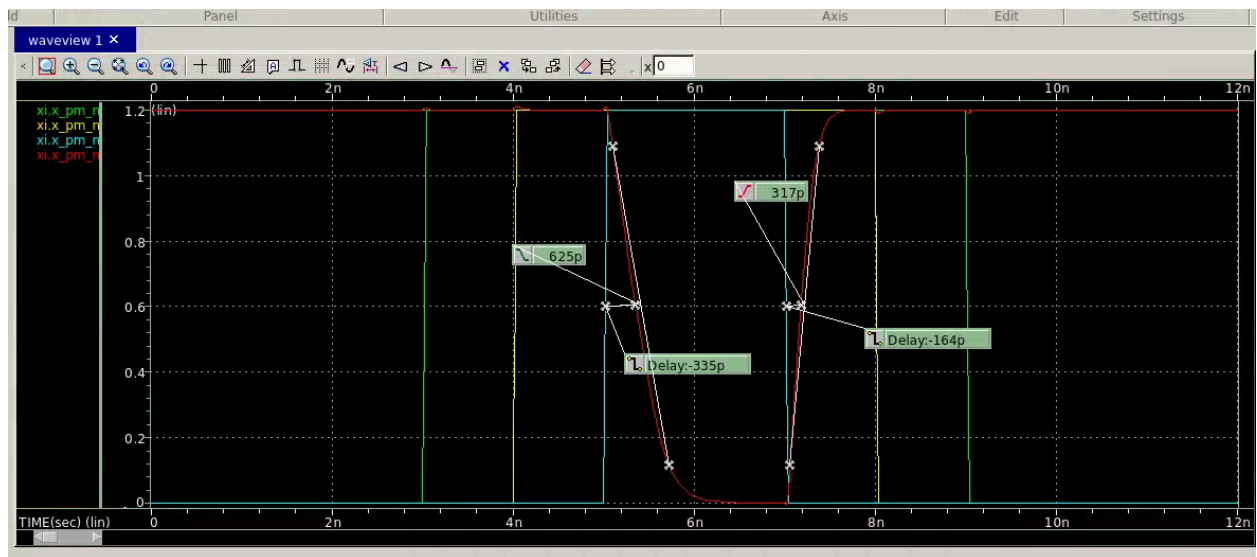
Layout Cell / Type	Source Cell	Nets	Instances	Ports
NAND3	NAND3	6L, 6S	1L, 1S	6L, 6S

Cell NAND3 Summary (Clean)

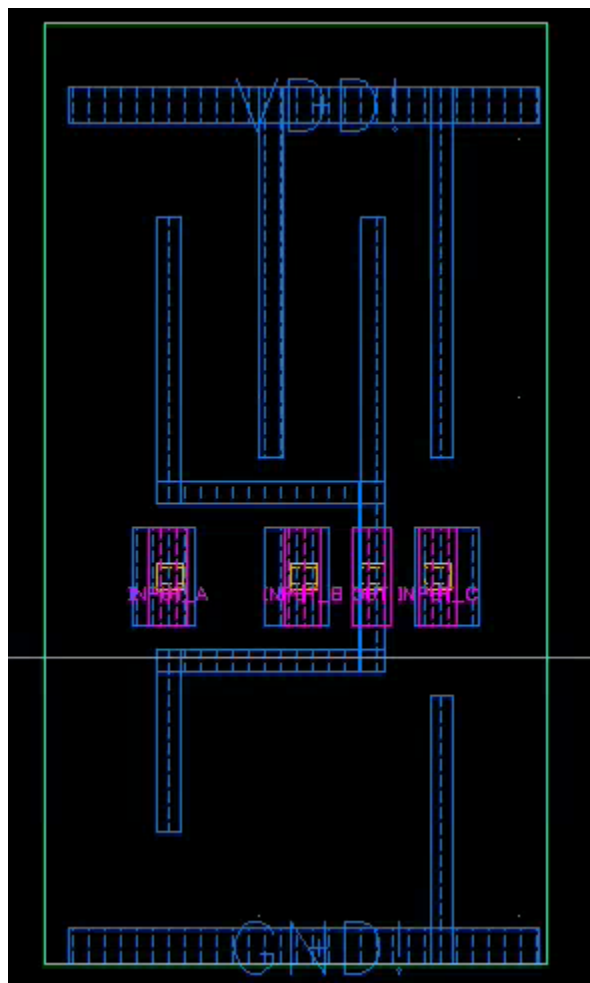
CELL COMPARISON RESULTS (TOP LEVEL)

 # CORRECT #
 #####

Waveview

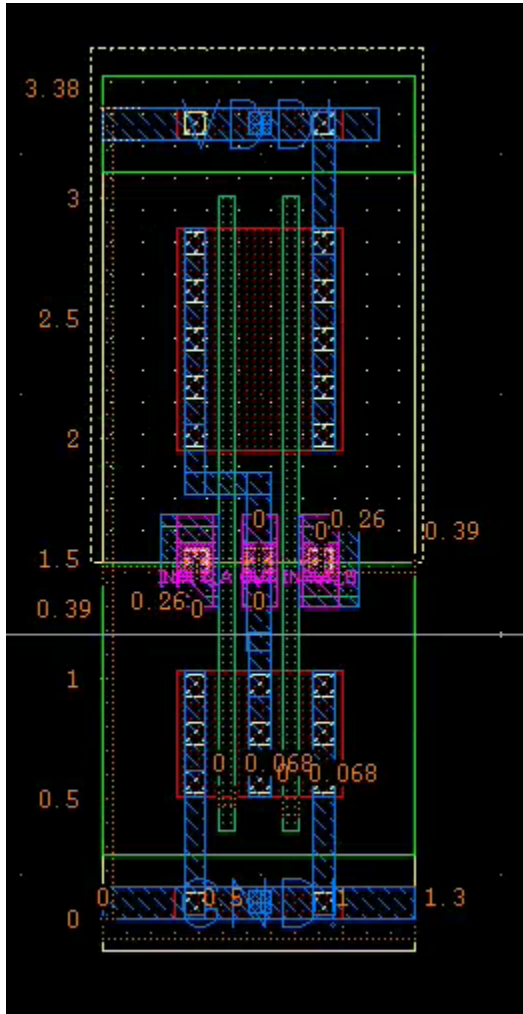


Abstract



nor2

Layout



Width = 1.3
Height = 3.38
Area = 4.394

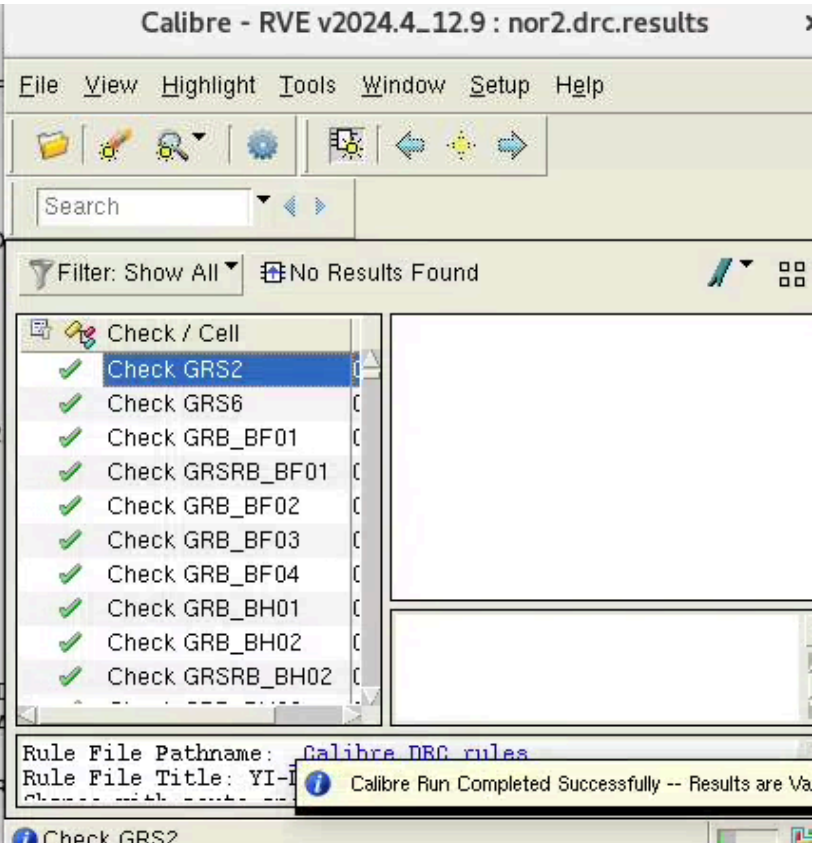
DRC

```

=====
PRIMARY REPORT

Wed Nov 5 23:13:24 2025
v2024.4_12.9 Tue Oct 1 20:34:12 PDT
Calibre_DRC_rules_
400054.09 - YI-RT00052.12
DS
2.calibre.db
nor2
/home/eng/jj/jra190000/cad/gf65/nor2
190000
check: 1000
: 4096
nor2.drc.results (ASCII)
L
PRIMARY
nor2.drc.summary (REPLACE)
ACUTE = YES SKEW = YES ANGLED
SIMPLE POLYGON = YES NONSIMPLE PA
COMMENT TEXT + RULE FILE INFORMATION
PRIMARY-BASED
=====

```



LVS

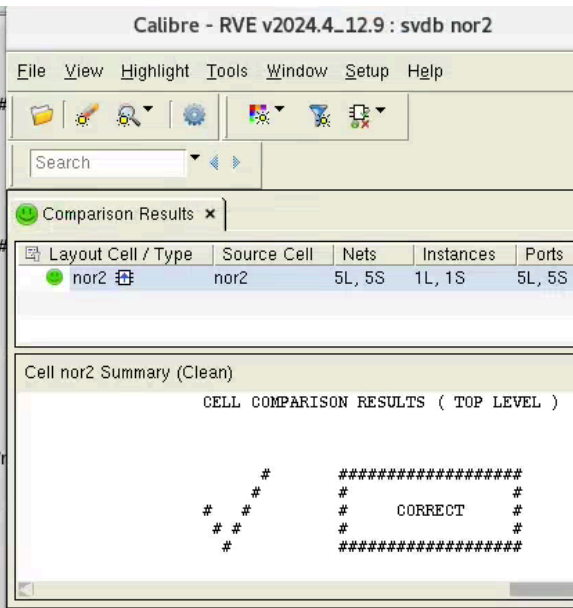
```

#####
CALIBRE SYSTEM ##
LVS REPORT ##
#####

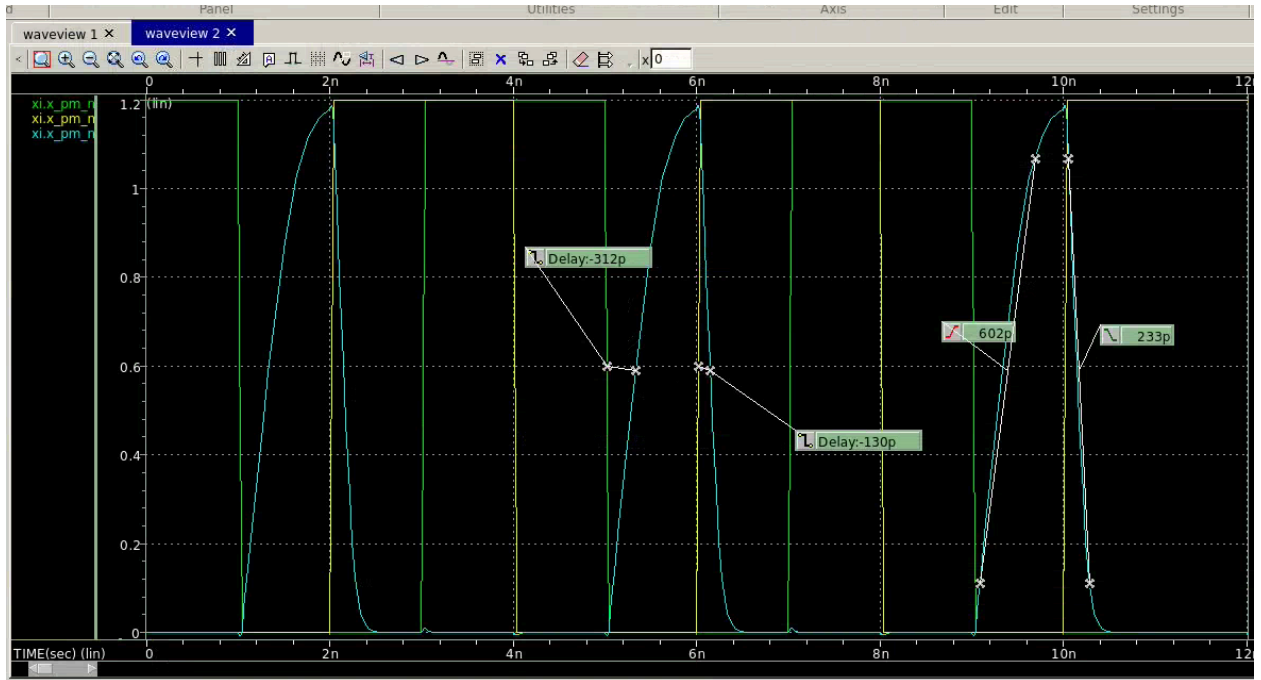
E: nor2.lvs.report
nor2.sp ('nor2')
nor2.src.net ('nor2')
_Calibre_LVS_rules_
Wed Nov 5 23:14:22 2025
PRIMARY: /home/eng/jj/jra190000/cad/gf65/nor2
jra190000
: v2024.4_12.9 Tue Oct 1 20:34:12 PDT

OVERALL COMPARISON RESULTS

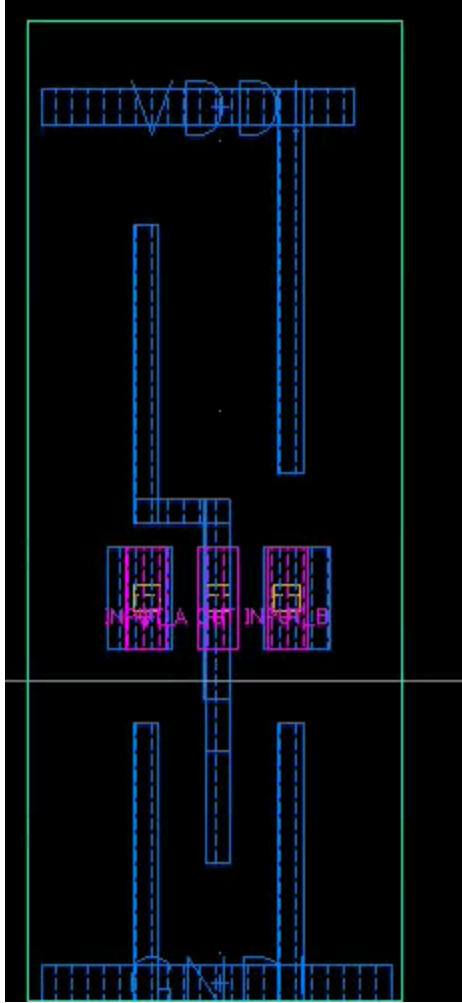
```



Waveforms

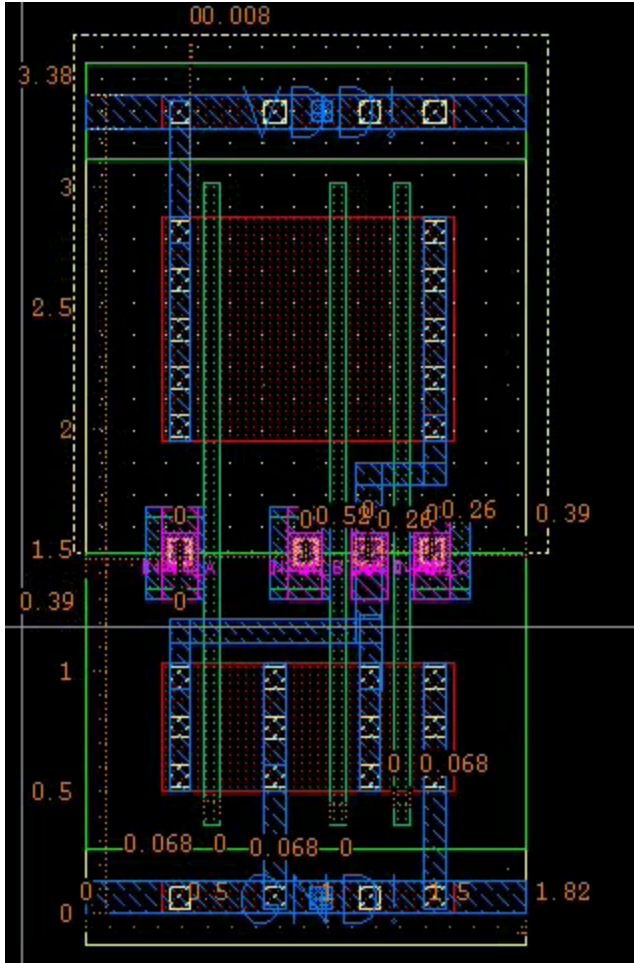


Abstract



nor3

Layout

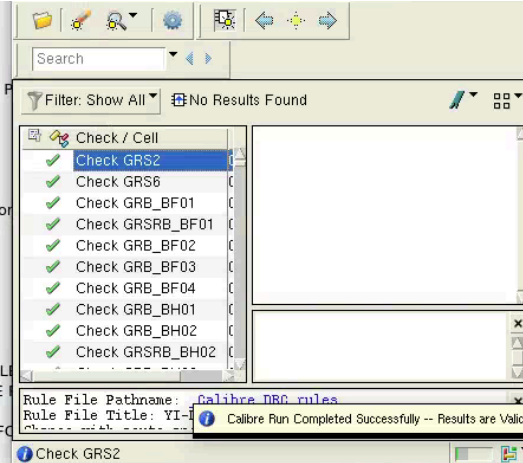


Width = 1.82
 Height = 3.38
 Area = 6.1516

DRC

```

=====
=== CALIBRE::DRC-H SUMMARY REPORT
===
Execution Date/Time:   Wed Nov  5 23:17:56 2025
Calibre Version:      v2024.4_12.9   Tue Oct 1 20:34:12 P
Rule File Pathname:   _Calibre_DRC_rules_
Rule File Title:      YI-DM00054.09 - YI-RT00052.12
Layout System:        GDS
Layout Path(s):       nor3.calibre.db
Layout Primary Cell:   nor3
Current Directory:    /home/eng/j/jra190000/cad/gf65/nor3
User Name:            jra190000
Maximum Results/RuleCheck: 1000
Maximum Result Vertices: 4096
DRC Results Database: nor3.drc.results (ASCII)
Layout Depth:         ALL
Text Depth:           PRIMARY
Summary Report File:  nor3.drc.summary (REPLACE)
Geometry Flagging:   ACUTE = YES  SKEW = YES  ANGLE = YES
                     NONSIMPLE POLYGON = YES  NONSIMPLE
Excluded Cells:
CheckText Mapping:    COMMENT TEXT + RULE FILE INFO
Layers:               MEMORY-BASED
  
```



LVS

The screenshot shows the Calibre RVE v2024.4.12.9 interface. On the left, a terminal window displays the LVS report for 'nor3.lvs.report'. The report includes the following text:

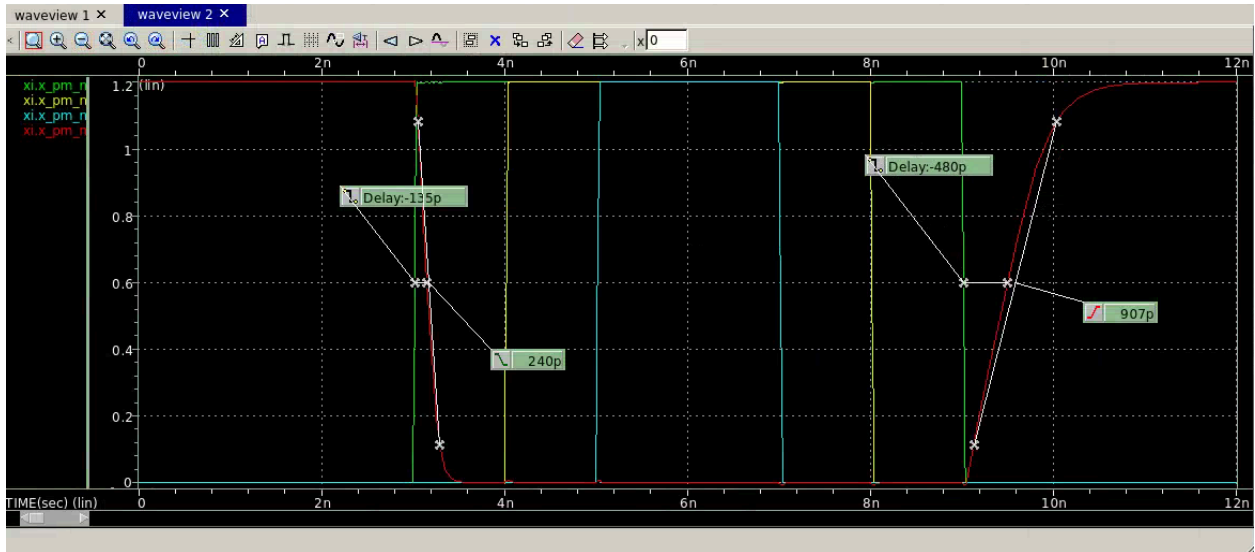
```
#####  
#####  
##  
## CALIBRE SYSTEM ##  
## LVS REPORT ##  
##  
#####  
#####  
  
NAME: nor3.lvs.report  
ME: nor3.sp ('nor3')  
ME: nor3.src.net ('nor3')  
_Calibre_LVS_rules_  
IME: Wed Nov 5 23:20:24 2025  
RECTORY: /home/eng/j/jra190000/cad/  
VS  
jra190000  
VERSION: v2024.4.12.9 Tue Oct 1  
T 2024
```

On the right, the 'Comparison Results' window is open, showing a table with the following data:

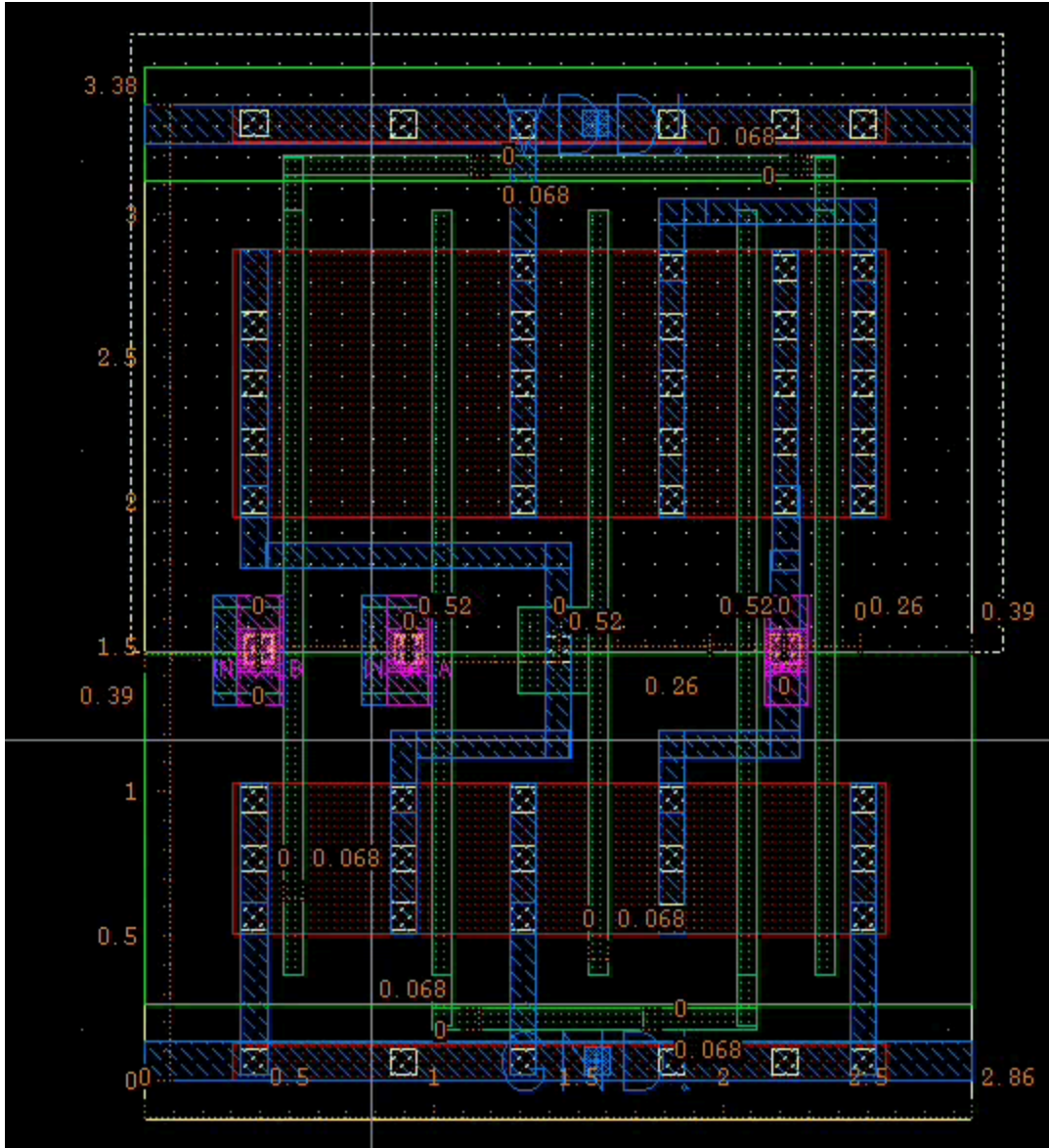
Layout Cell / Type	Source Cell	Nets	Instances	Ports
nor3	nor3	6L, 6S	1L, 1S	6L, 6S

Below the table, the 'Cell nor3 Summary (Clean)' window displays 'CELL COMPARISON RESULTS (TOP LEVEL)' with a 'CORRECT' status, surrounded by a decorative border of hash symbols.

waveform



Abstract



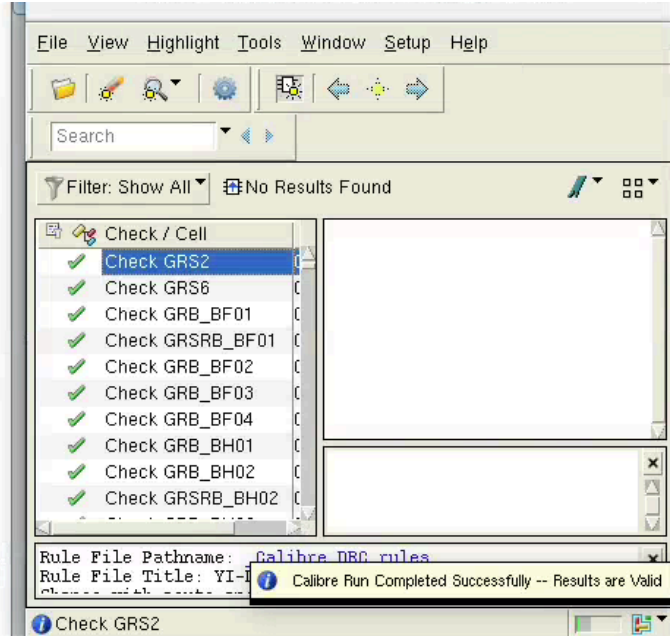
Width = 2.86
Height = 3.38
Area = 9.6668

DRC

```

=====
=====
=====
=== CALIBRE::DRC-H SUMMARY REPORT
===
Execution Date/Time:   Wed Nov  5 23:25:15 2025
Calibre Version:      v2024.4_12.9   Tue Oct 1
20:34:12 PDT 2024
Rule File Pathname:   _Calibre_DRC_rules_
Rule File Title:      YI-DM00054.09 - YI-RT00052.12
Layout System:        GDS
Layout Path(s):       xor2.calibre.db
Layout Primary Cell:  xor2
Current Directory:    /home/eng/j/jra190000/cad/gf65/
xor2_DRC
User Name:            jra190000
Maximum Results/RuleCheck: 1000
Maximum Result Vertices: 4096
DRC Results Database: xor2.drc.results (ASCII)
Layout Depth:        ALL
Text Depth:          PRIMARY
Summary Report File:  xor2.drc.summary (REPLACE)
Geometry Flagging:   ACUTE = YES SKEW = YES
ANGLED = NO OFFGRID = YES
NONSIMPLE POLYGON = YES

```



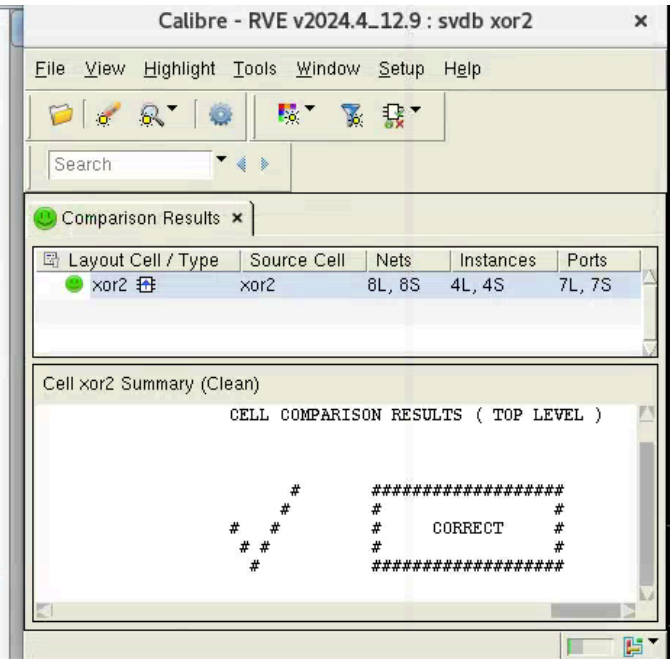
LVS

```

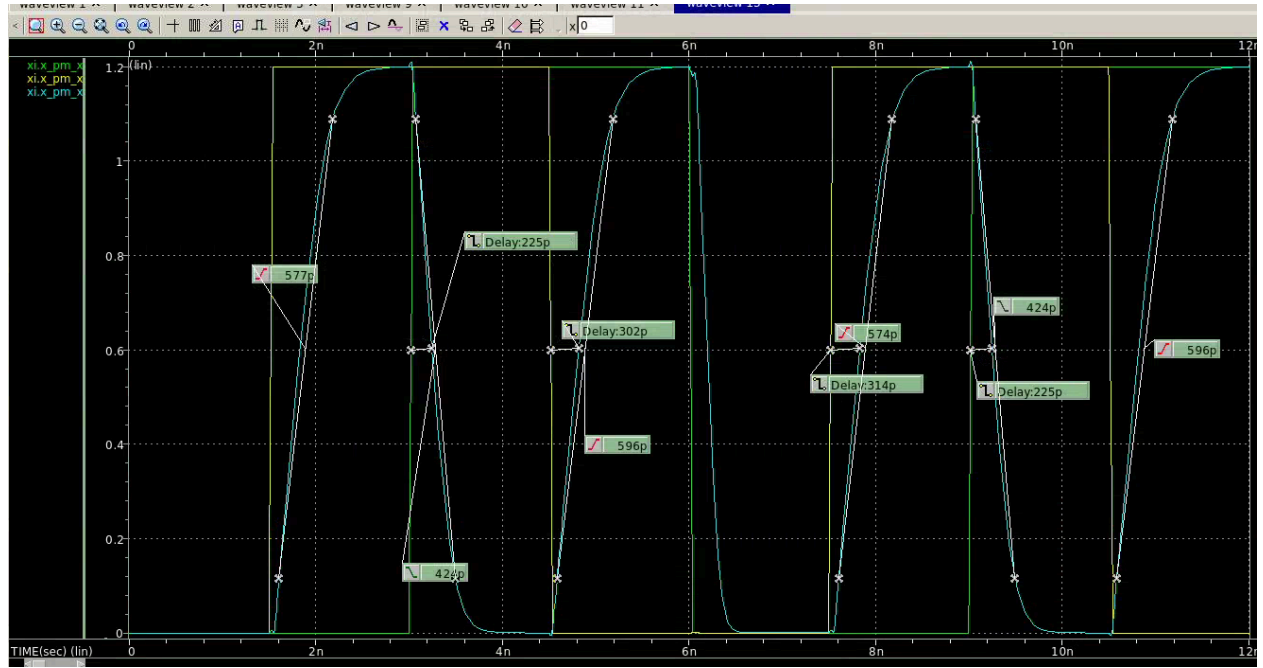
#####
#####
##          ##
##  CALIBRE SYSTEM  ##
##          ##
##  LVS REPORT      ##
##          ##
#####
#####

REPORT FILE NAME:   xor2.lvs.report
LAYOUT NAME:       xor2.sp ('xor2')
SOURCE NAME:       xor2.src.net ('xor2')
RULE FILE:         _Calibre_LVS_rules_
CREATION TIME:     Wed Nov  5 23:26:40 2025
CURRENT DIRECTORY: /home/eng/j/jra190000/cad/
gf65/xor2_LVS
USER NAME:         jra190000
CALIBRE VERSION:   v2024.4_12.9   Tue Oct 1
20:34:12 PDT 2024

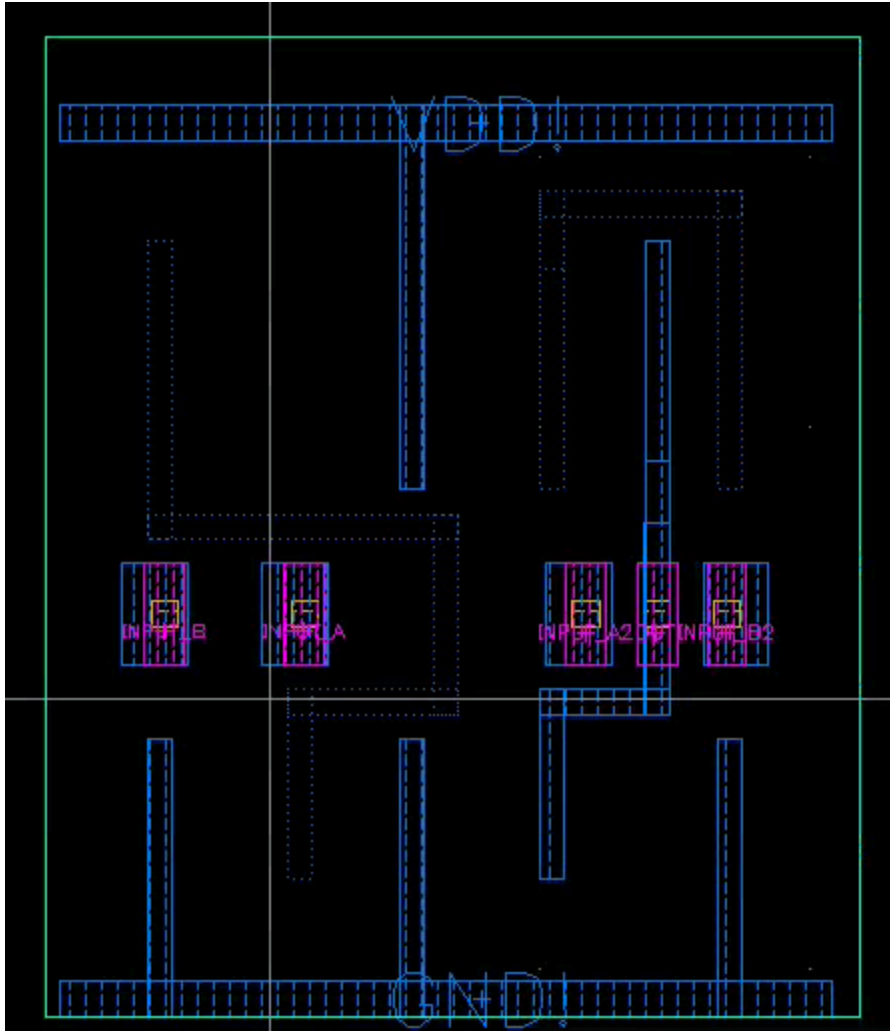
```



Waveform

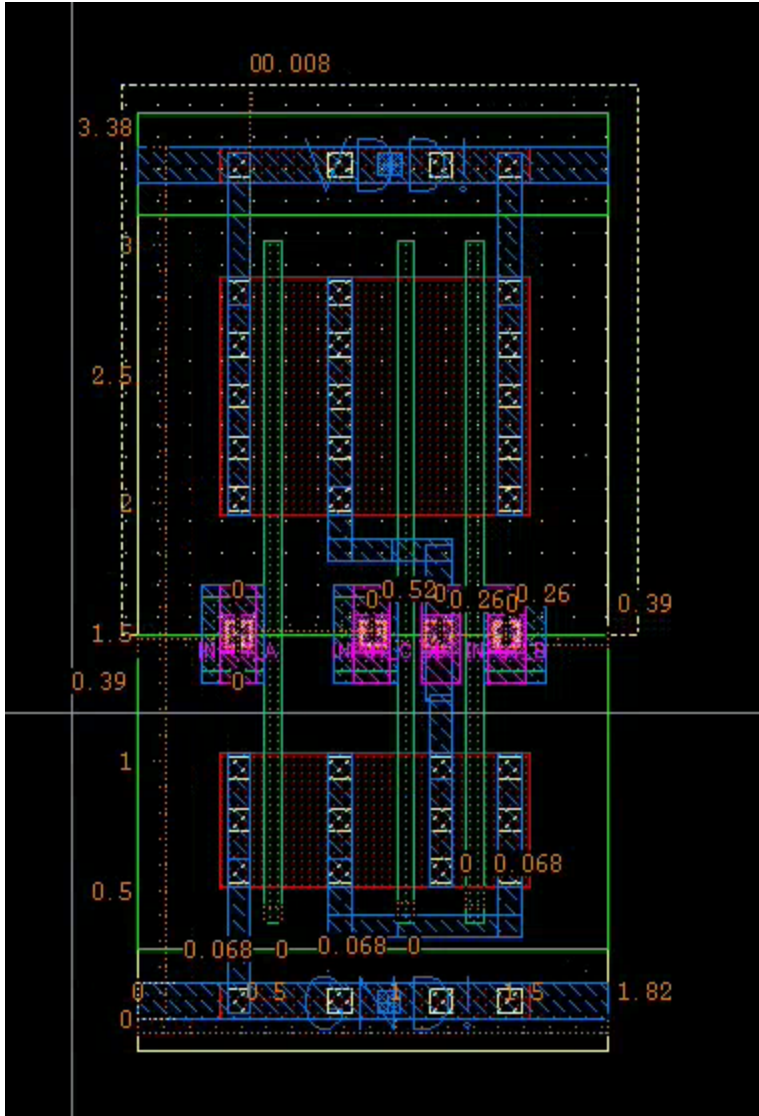


Abstract



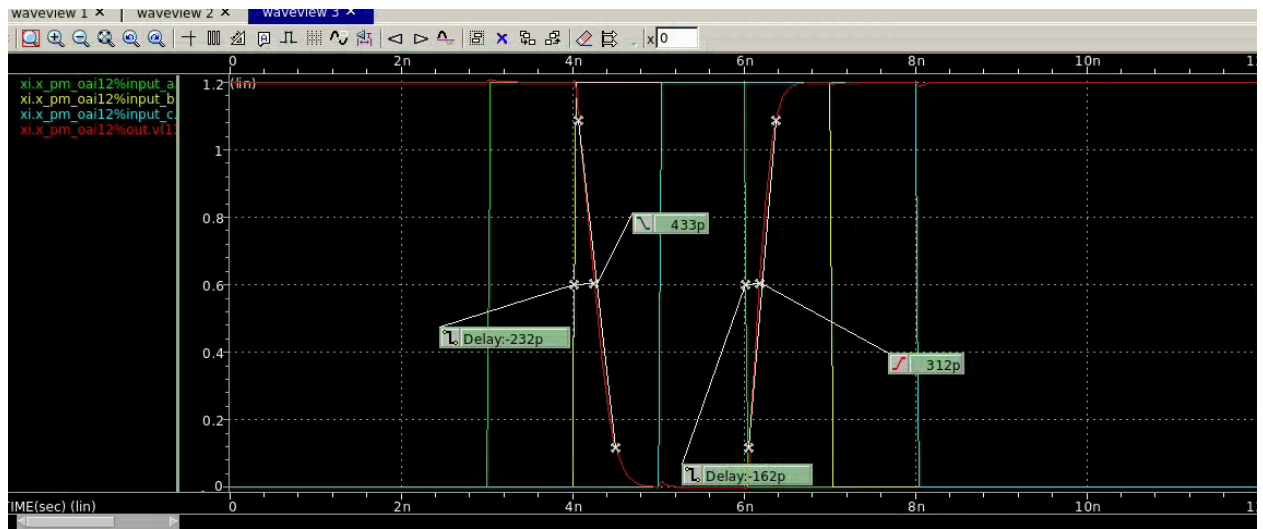
oai12

Layout

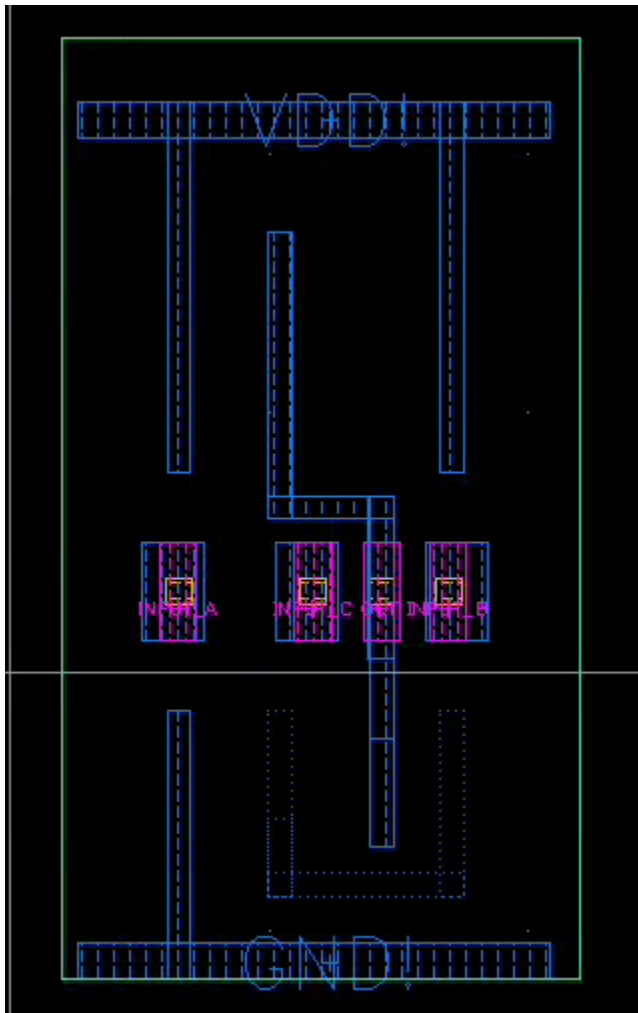


Width = 1.82
Height = 3.38
Area = 6.1516

DRC

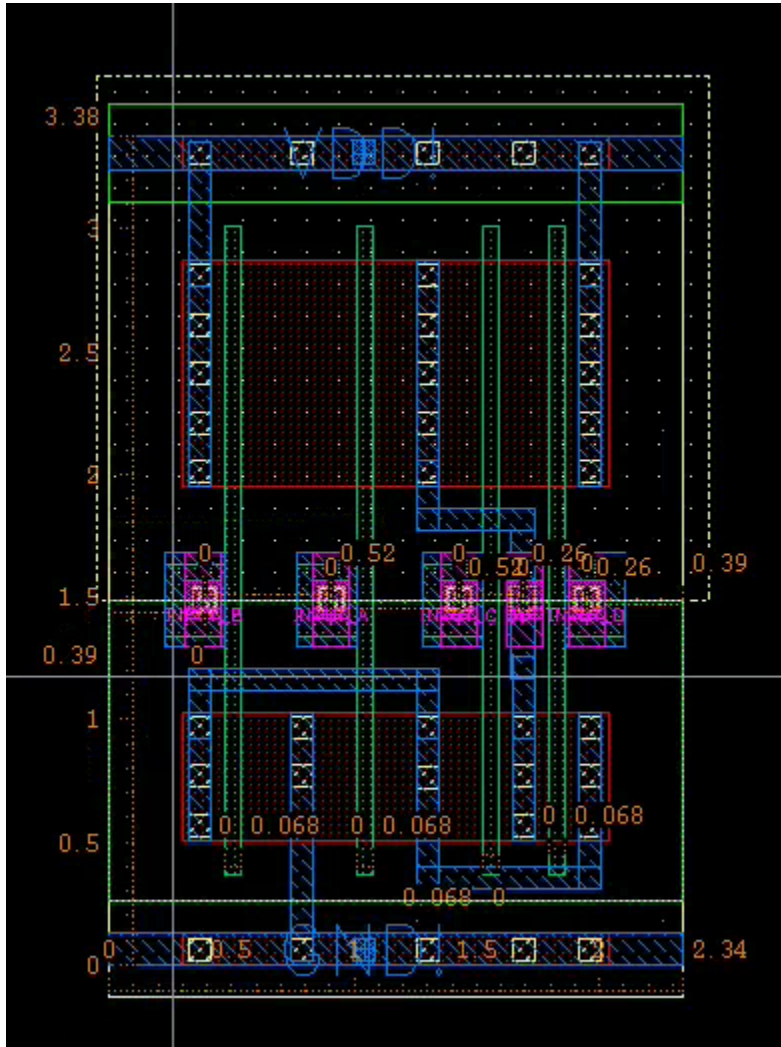


abstract



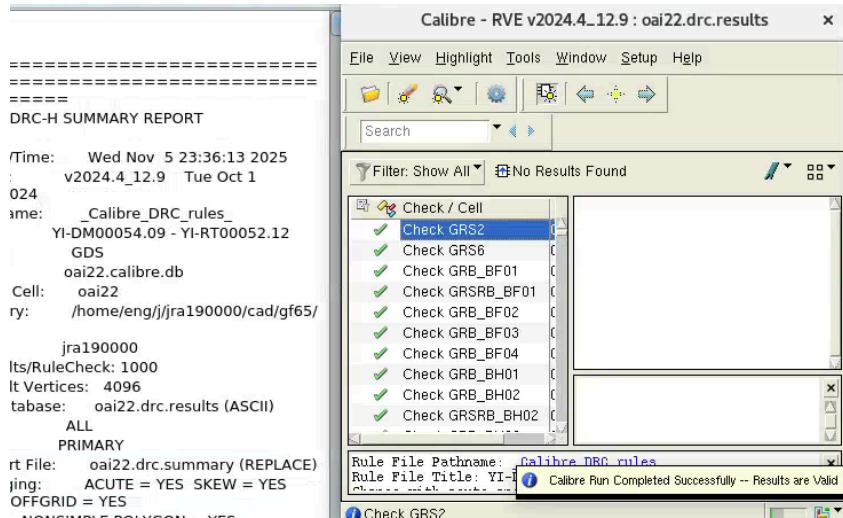
oai22

Layout

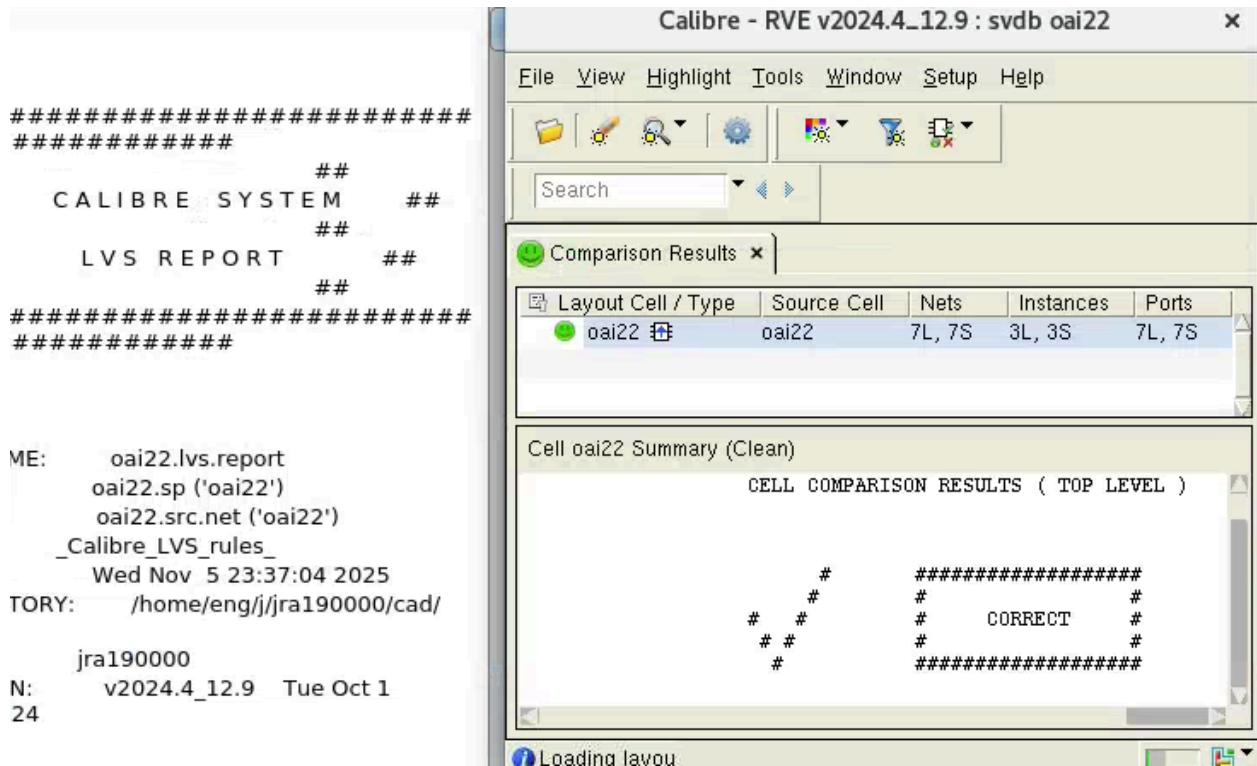


Width = 2.34
Height = 3.38
Area = 7.9092

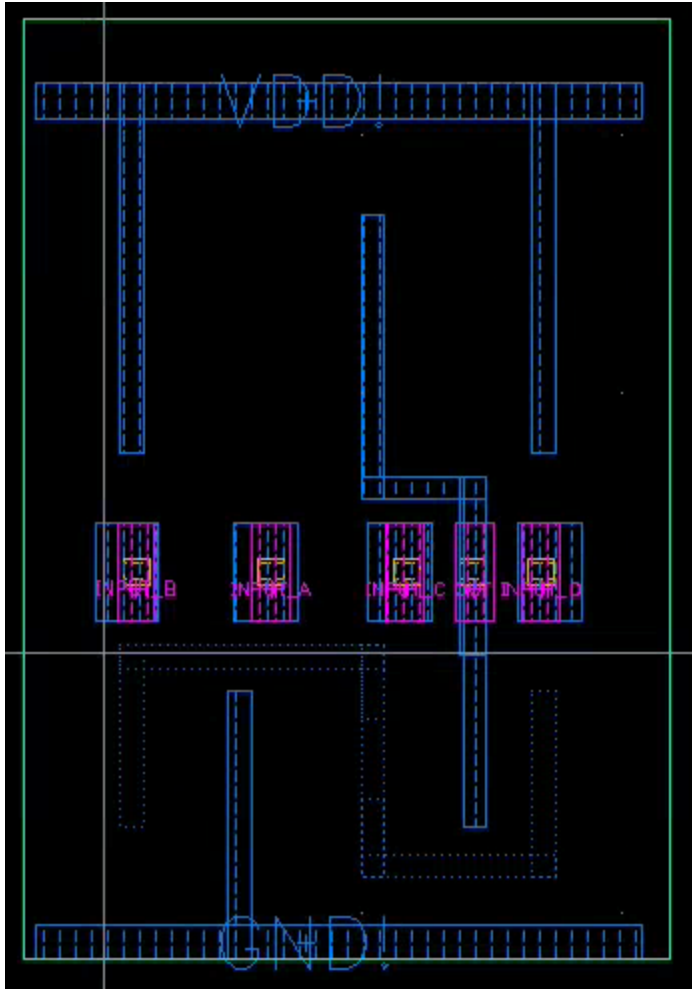
DRC



LVS

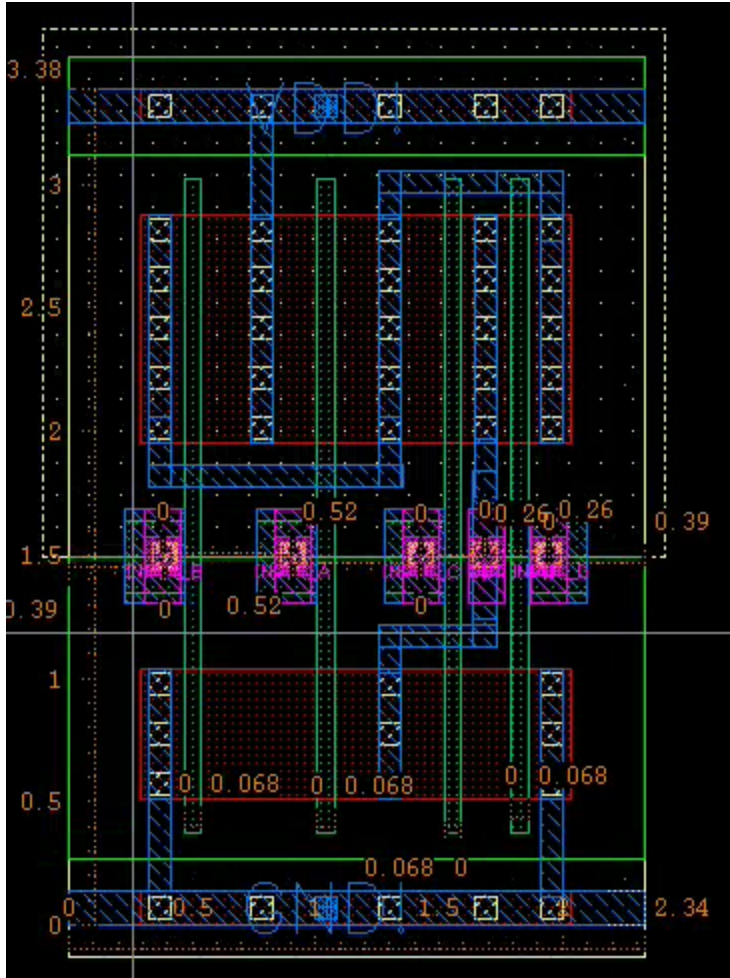


Waveforms



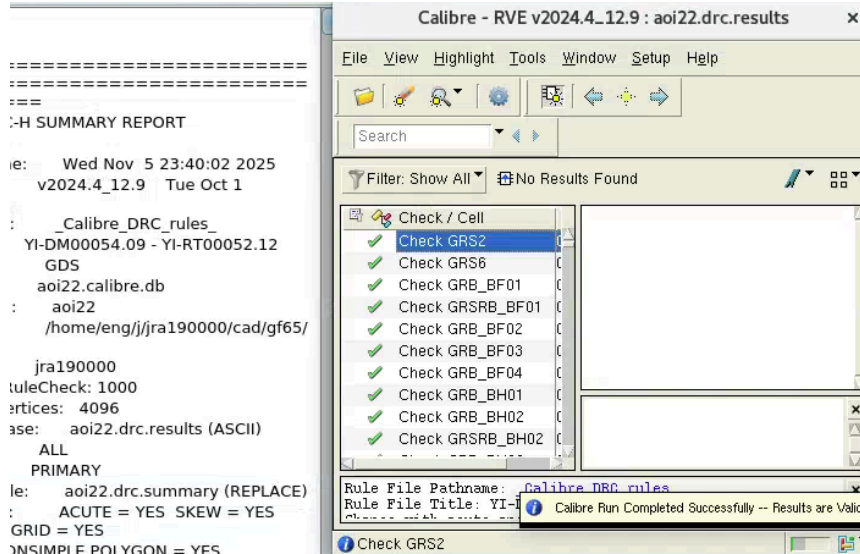
aoi22

Layout

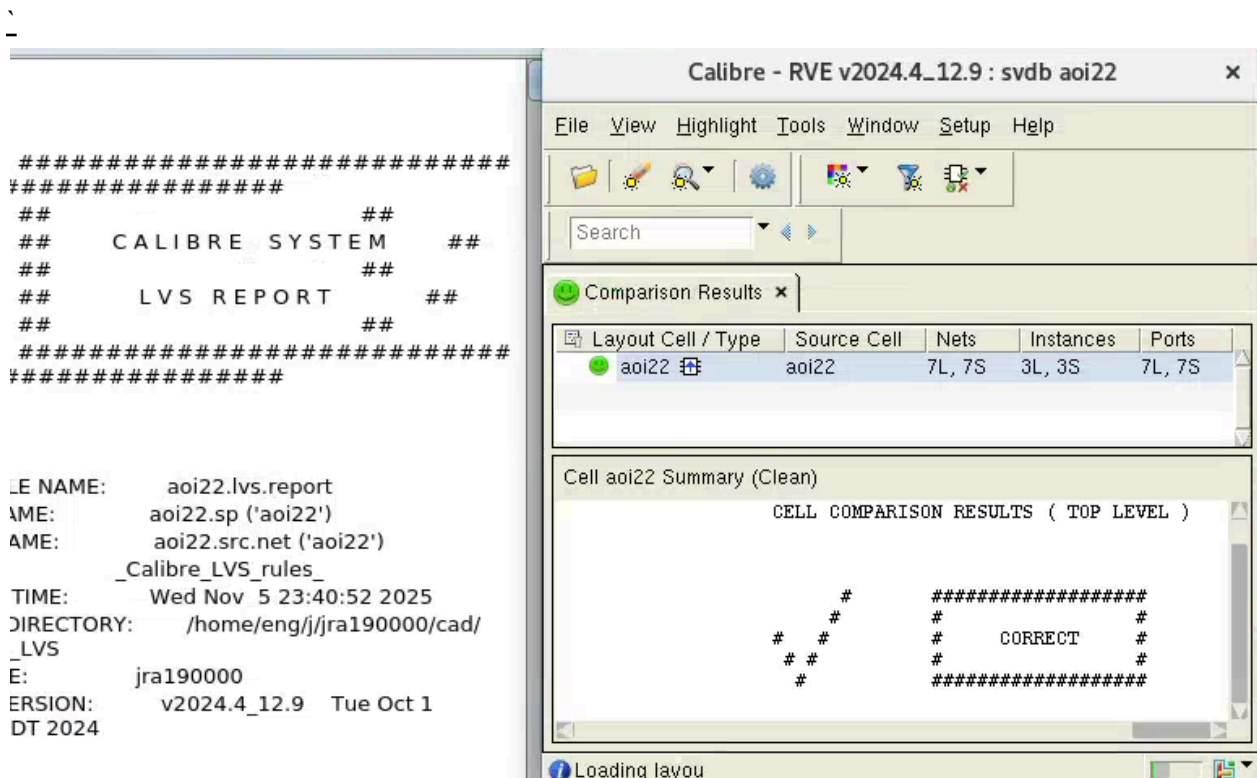


Width = 2.34
 Height= 3.38
 Area = 7.9092

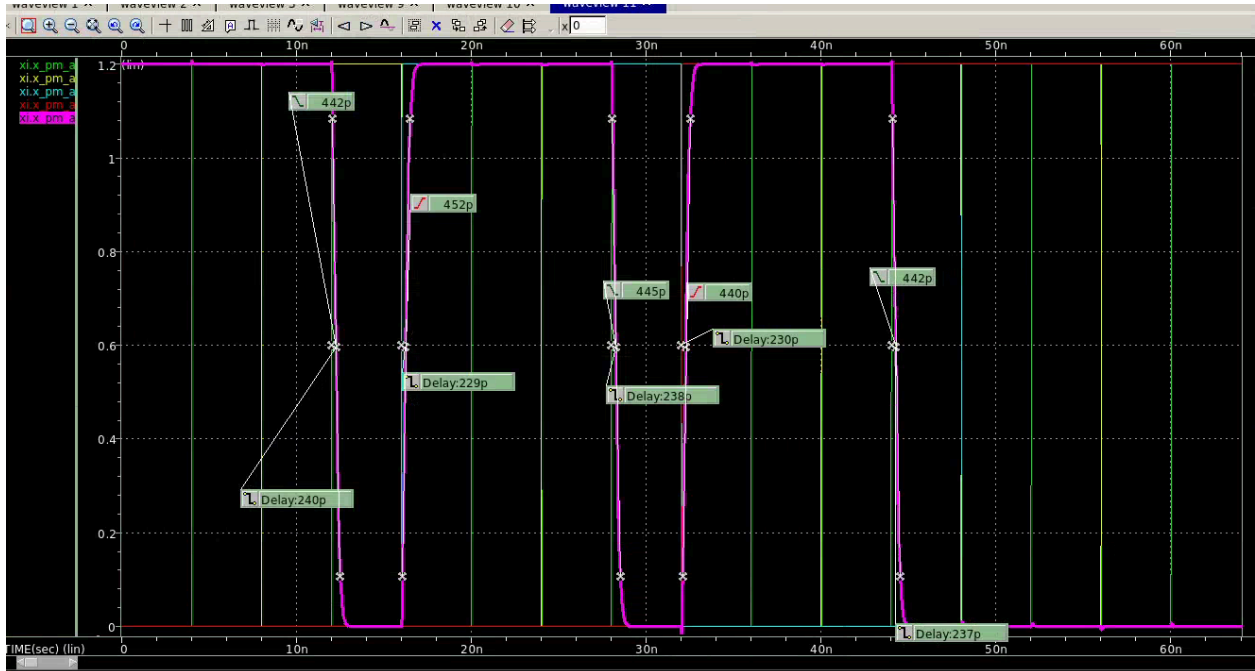
DRC



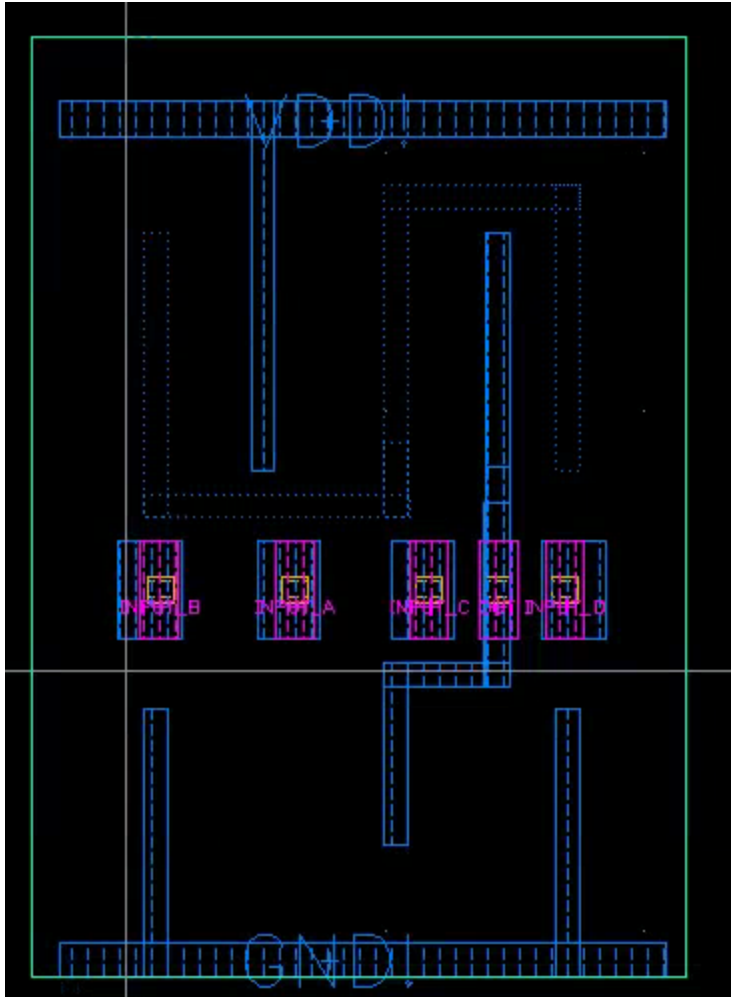
LVS



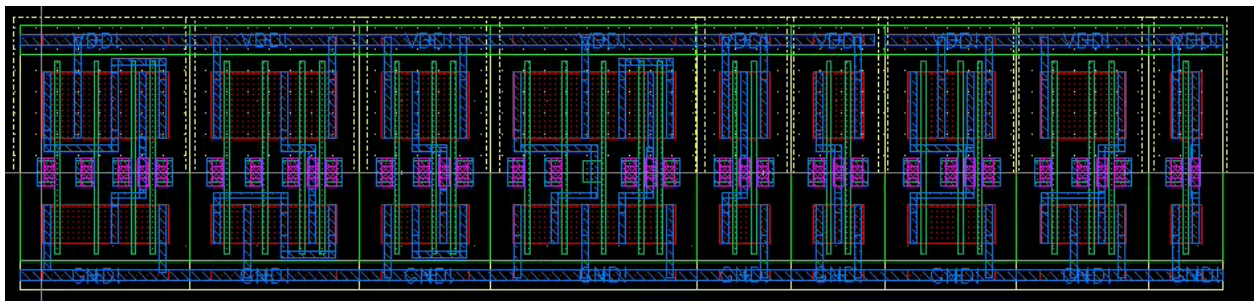
waveform



Abstract



ALL OF THEM



All drc

