

### Short keys (Layout window)

|                    |   |
|--------------------|---|
| G:                 | To invoke grid in layout widow  |
| Left mouse click   | To change the location of layout design box/pointer                   |
| Right mouse click  | To draw the rectangular structure for various requirements in layout  |
| Centre mouse click | To fill up the rectangle with required material such as – poly, metal |
| U:                 | undo  |
| Shift + U:         | redo  |
| I:                 | To select top most cell in window                                     |
| F:                 | For mirroring   |
| Z:                 | Zoom in   |
| Shift + Z:         | Zoom out  |
| A:                 | To Select everything under the rectangular                            |
| Shift + A          | To add in already selected area                                       |
| C:                 | Copy after selection (using A)  |
| E:                 | Edit  |
| O:                 | Open  |
| 4,8,6,2            | To move the selected are in either direction                          |

### Important Commands (command window)

|                     |  |
|---------------------|--|
| %drc find           | To find out DRC info                           |
| %label <name>       | To label the terminals                         |
| %extract all        | To extract netlist in .exe format              |
| %ext2spice          | Conversion from .ext to .spice                 |
| %getcell <file.mag> | To call a cell/design in another layout design |
| %load <file.mag>    | To open layout                                 |
| x                   | To see inside the called cell/design box       |

### Frequently used DRC Rule (in Lambda):

|  |     |
|--|-----|
| Minimum size of contact:                     | 4x4 |
| Metal M1 and M2 minimum width:               | 3   |
| Metal M3 minimum width                       | 6   |
| n-well/p-well minimum design                 | 10  |
| polysilicon minimum width                    | 2   |
| p-diffusion/n-diffusion minimum length       | 3   |
| Minimum Separation between n-diff and p-diff | 10  |
| Minimum Separation between n-diff and n-well | 5   |

### VLSI Vocab:

|             |   |
|-------------|---|
| DRC:        | Design Rule Check   |
| PDK:        | Process Design Kit  |
| Tapeout:    | Layout design is sent to foundry for fabrication                      |
| Foundry:    | Fab labs, where fabrication is done at broad level                    |
| Technology: | Generally Channel length of MOS (not always)/ Tech node/ feature size |
| GDS II:     | Graphic Data System II  |

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