Types of Standard Cell Libraries

Standard Cell Library Types

- According to the Density
- According to the Threshold Voltage (VTH)

Classification according to the Density

- Ultra High Density (UHD) - 7 Track or 8 Track
- High Density (HD) - 9 Track
- High Performance (HP) - 12 Track

Classification according to the Threshold Voltage (VTH)

- Low VT (LVT) - Fast because of low Gate Delay, but high leakage
- Standard VT (SVT) or Regular VT (RVT)
- High VT (HVT) - Low leakage, but slow because of high Gate Delay

- Metal 2 pitch is used to calculate the Number of Tracks in different Density Libraries

- Sub-threshold Leakage varies exponentially with VTH compared to the weaker dependency of Delay over VTH

- HVT Cells are used in Non-critical paths to reduce Leakage Power while SVT Cells are used in Critical paths to met Timing