

Moore's Law:

An observation that transistor density on a chip doubles roughly every two years.

The above observation no more holds good for the following limitations.

Limitations:

As the size of Transistors decreases, the number of transistors will increase on chip resulting in high power consumption which will lead to higher Temperatures. Temperatures beyond a level can melt the chip and need to be cooled consistently.

Dennard Scaling: Power usage of a transistor scales down with its size, reducing temperature. Reduction of temperatures can also be achieved by minimising the voltage swings of a transistor. Voltage swings cannot go beyond a threshold as there would be noise to consider. Also, as the transistors get smaller and smaller the insulators also become thinner. This would result in what may be called a Power Leak. This would affect the accuracy.