Moore's law is the observation that the number of transistors in a dense integrated circuit doubles about every two years. The observation is named after Gordon Moore, the co-founder of Fairchild Semiconductor and CEO of Intel, whose 1965 paper described a doubling every year in the number of components per integrated circuit and projected this rate of growth would continue for at least another decade. In 1975, looking forward to the next decade, he revised the forecast to doubling every two years.

Moore's law is an observation and projection of a historical trend and not a physical or natural law. Although the rate held steady from 1975 until around 2012, the rate was faster during the first decade. In general, it is not logically sound to extrapolate from the historical growth rate into the indefinite future. For example, the 2010 update to the International Technology Roadmap for Semiconductors predicted that growth would slow around 2013, and in 2015 Gordon Moore foresaw that the rate of progress would reach saturation: "I see Moore's law dying here in the next decade or so."

Moore's law stopped being true for the reasons as follows:

1. As transistors increase, power demand increases, which increases heat.
2. Smaller transistors switch faster
3. Exponential increase in density would lead to exponential increase in speed
4. Transistor’s need a minimum voltage to switch, and voltage reduction has lower limits due to noise.
5. Dynamic power consumption is reduced by voltage scaling.
6. Voltage scaling does not prevent power leakage.