Moore's law is an observation that the transistor density doubles every 2 years.
There are many challenges today that account for the failure of the law.

1. As transistor density increases, power consumption increases which further leads to increase in heat generation.
2. Exponential increase in density means exponential increase in speed.
3. Smaller transistors tend to switch faster.
4. Transistors need minimum voltage to switch and noise further contributes to the voltage change and power consumption.
5. Dennard's scaling is not followed, voltage scaling does not prevent power leakage.