Difference Between SRAM and DRAM

SRAM and DRAM are the modes of **integrated-circuit RAM** where SRAM uses transistors and latches in construction while DRAM uses capacitors and transistors. These can be differentiated in many ways, such as SRAM is comparatively faster than DRAM; hence SRAM is used for cache memory while DRAM is used for main memory.

**RAM (Random Access Memory)** is a kind of memory which needs constant power to retain the data in it, once the power supply is disrupted the data will be lost, that’s why it is known as **volatile memory**. Reading and writing in RAM is easy and rapid and accomplished through electrical signals.

## Key Differences Between SRAM and DRAM

1. SRAM is an **on-chip** memory whose access time is small while DRAM is an **off-chip** memory which has a large access time. Therefore SRAM is faster than DRAM.
2. DRAM is available in **larger** storage capacity while SRAM is of **smaller** size.
3. SRAM is **expensive** whereas DRAM is **cheap**.
4. The **cache memory** is an application of SRAM. In contrast, DRAM is used in **main memory**.
5. DRAM is **highly dense**. As against, SRAM is **rarer**.
6. The construction of SRAM is **complex** due to the usage of a large number of transistors. On the contrary, DRAM is **simple** to design and implement.
7. In SRAM a single block of memory requires **six** transistors whereas DRAM needs just one transistor for a single block of memory.
8. DRAM is named as dynamic, because it uses capacitor which produces**leakage current** due to the dielectric used inside the capacitor to separate the conductive plates is not a perfect insulator hence require power refresh circuitry. On the other hand, there is no issue of charge leakage in the SRAM.
9. Power consumption is higher in DRAM than SRAM. SRAM operates on the principle of changing the direction of current through switches whereas DRAM works on holding the charges.