# Capacitor Applications

***Capacitor is a basic storage device to store electrical charges and release it as it is required by the circuit. Capacitors are widely used in electronic circuits to perform variety of tasks, such as smoothing, filtering, bypassing etc….***

***One type of capacitor may not be suitable for all applications. Ceramic capacitors are generally superior than other types and therefore can be used in a vast ranges of application. The following is the typical capacitor applications in electronic industries:***

***DC blocking capacitor: In this application the capacitor blocks the passage of DC current (after completely charged) and yet allows the AC to pass at certain portion of a circuit.***

***Capacitor as a filter: Capacitors are the main elements of filters. There are several types of filters that are used in electronic circuits, such as LPF (Low Pass Filter), HPF(high Pass Filter), BPF (Band Pass Filter), etc….***
***Since the reactance of the capacitor is inversely related to the frequency, therefore it can be used to increase or decrease the impedance of the circuit at certain frequencies and therefore does the filteration job.***

***Capacitor as a discharge unit: Capacitors used as a charging unit and the release of the charge (discharge energy) is used for triggering, ignition, and in high scale as a power source.***

***By Pass capacitor: The reactance of capacitor decreases as the frequency increases. Therefore in certain application it is used in parallel with other components to bypass it at a specified frequency.***

***Coupling capacitor: The ability of capacitor to pass AC signal, allows it to couple a section of an electronic circuit to another circuit.***

***Decoupling capacitor: In high speed electronic logic switching causes draw of significant amount of current which in turn would cause disturbance in the logic voltage level. Decoupling capacitor is typically located very close to the IC output and serves as a local energy source to provide the needed extra current and therefore minimizes the noise and disturbances to the logic signal.***

***Snubber capacitor: In some application, relays or SCR (Silicon controlled rectifier) are to drive a high inductance loads. In these circumstances, when the relay or the SCR opens, a major transient voltage could be induced in the contact of the relay or across the junction of SCR, which in turn either shows as an arc on the relay contacts or may damage the internal SCR junction. Therefore snubber capacitor is used to limit the high voltage transient across the circuit.***

***There are also other applications such as Tuned circuits, signal processing, etc...***