

# Aluminium electrolytic capacitor essay examples

[Environment](#), [Electricity](#)



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## **Introduction**

A capacitor was originally called a condenser; it is an inactive two end points of an electrical part that is used to store energy electro-statically in an electric field. There are different forms of capacitors that differ extensively, but all of them have at least two different conductors separating them by insulators (dielectric) for instance one the construction, which has metal foils separated by a layers of thin insulating film. Capacitors are required in many common parts of an electrical circuit (Fawwaz, 2009).

When there is a significant variance across the conductors, an electric field is created transversely in the dielectric, making or causing positive charges to collect on one plate and negative on another plate. Energy is usually stored in the field of electrostatic (Fawwaz, 2009). A perfect capacitor is known by looking at the constant value called the capacitance. This refers to the ratio of the electric charge on the different conductors to the potential differentiation between them.

## **Principle of the Aluminium Electrolytic Capacitor**

An Aluminium Electrolytic Capacitor comprises of cathode aluminium, electrolytic rag, electrolyte, and an aluminium oxide film, which is made to work like a dielectric, created on the anode foil exterior. The oxide film offers a better dielectric, which has rectifying capabilities (Fawwaz, 2009). When in contact with electrolyte, it becomes an excellent forward direction insulator. The current across the capacitor can use more than one path for the flow as it passes through the first resistor to the next one.

Aluminium Electrolytic Capacitor is made up of two aluminium foil, namely cathode and anode with a paper. This foil and paper are then coiled or twisted with the paper into one thing. Given that the oxide film has the capability to correct properties, a capacitor also has polarity (Fawwaz, 2009). Which means that if the two, the anode and cathode foils have an oxide film, the capacitor would be non-polar type capacitor. The voltage from the source will flow sequentially through all the resistors in the circuit.

## **Capacitance of Aluminium Electrolytic Capacitor**

The capacitance of Aluminium Electrolytic Capacitor has very good resistance or can withstand voltage in relation to the thickness. The thickness of the dielectric can be controlled in accordance with the applied voltage of the aluminium electrolytic capacitors (Fawwaz, 2009). For that reason, in comparison to other dielectric, the capacitor endures similar voltage as given by the dielectric even if the thickness is reduced. The current across the capacitor can use more than one path for the flow as it passes through the first resistor to the next one. This is because the surface of the foil is very effective in what is known as managing the voltage, which

works on high and low voltages.

For that reason, aluminium electrolytic capacitor has a higher capacitance for a particular noticeable area than any other types of capacitor. It has also been established that the current across the two foils in the capacitor is related to the size and the thickness of the foil (Fawwaz, 2009).

### **The Dielectric**

A high purity fixed aluminium foil is anodized to a solution to make an oxide aluminium film on the surface. This is what is commonly known as the dielectric of the aluminium capacitor (Fawwaz, 2009). The thickness or thinness of the dielectric is almost proportional to the voltage formed in the process.

### **Work Cited**

Fawwaz T., (2009). Fundamentals of Applied Electromagnetic. Upper Saddle River, New Jersey: Prentice Hall.