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# Development of super tantalum capacitors





## Overview

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What type of resistance is used in tantalum capacitors?

A series resistance is used. Tantalum Capacitors are solid electrolyte capacitors and were introduced in the 50's using legacy MnO<sub>2</sub> counter electrode. On the 90's the new Polymer conductive counter electrode technology started mass production and during the last 2 decades R&D and NPD has supported adoption and business growth.

How are SMD solid tantalum capacitors formed?

Traditional SMD solid tantalum capacitors are formed by the attachment of leads to an active zone and subsequent package encapsulation. The active zone contains the anode, dielectric and terminating (Fig.2). Fig.2. Tantalum capacitor construction Basically, there are two ways to achieve higher CV (Capacitance x Voltage) per given volume.

Are tantalum capacitors a good choice for embedded technology?

Tantalum (Ta) capacitors have the potential to provide the highest volumetric density among current capacitor technologies, but their bulky size and low-frequency stability limit their use in embedded technologies.

How to increase the CV of a tantalum capacitor?

compact order of the elemental tantalum grains and 2] to penetrate and cover the pores with a size less than 10nm. The other direction for further increase of CV is improvement of permittivity of the dielectric in the Tantalum capacitors. The advance study shows interim potential to increase it by 1,5 times.



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