# Is there tin in the capacitor

At present, TiN is the mainstream material used for MIM capacitor metal plate with Si N as insulator dielectric. However, the resistance characteristics of TiN are temperature unstable, and it has large lattice mismatch with Si N, which is detrimental to the device long-term reliability.

Abstract: For the first time, good thermal stability up to an annealing temperature of 1000degC has been demonstrated for a new TiN/Al 2 O 3 /WN/TiN capacitor structure.

HfO 2 -based ferroelectric capacitors, particularly TiN/Hf x Zr 1-x O 2 /TiN metal insulator metal (MIM) capacitors, have attracted considerable attention as promising candidates in the new...

Three kinds of top electrode types (TiN, Ru, and TiN/Ru) are sputter-deposited on ZrO2/Al2O3/ZrO2 (ZAZ) dielectric layers grown via atomic layer deposition (ALD) on TiN bottom electrodes. The TiN/Ru top electrode samples show the highest capacitance density among the three types of top

??: HfO 2 ??????,???TiN/Hf x Zr 1-x O 2 /TiN??-???-?????,??????????????????????? (CMOS)???,??????????????????????

Tin Whiskers Grown on Ceramic Chip Capacitor Via Temp Cycling (-40°C to +90°C) During a reliability study at NASA"s Jet Propulsion Laboratory,uniform whisker growth steps were observed and correlated with thermal cycles.

We reported on the impact of TiN PT on electrical characteristics of MIM capacitors, using CVD-TiN for electrodes and ALD-Al 2 O 3 for insulator. Concerning TiN layers, N 2 /H 2 plasma ensures Carbon desorption and stoichiometry, leading to ...

Tin: Tin is the standard metal used in the vast majority of metalized film capacitors, and is typically regarded as "neutral" towards tone. Copper: Copper is typically only found in high-end film/paper &  foil caps.

In this work, the high-voltage magnetron-sputtering-deposited TiN/Al 2 O 3 /TiN MIM capacitor has been fabricated and characterized. The fabricated MIM capacitor with a 1017-nm Al 2 O 3 dielectric layer exhibits superior electrical characteristics such as extremely small voltage coefficients of 0.08 ppm/V 2 and -2.39 ppm/V at 100 kHz and low ...

Surface mount multilayer ceramic capacitors (MLCCs) with electroplated pure tin finishes are not immune to tin whisker formation. Thermal cycling has been demonstrated to excite tin whisker formation in MLCCs with some documented growths approaching 250-um.

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