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METAL TO METAL CAPACITOR AND METHOD FOR PRODUCING SAME

ABSTRACT

The present invention provides a method for fabricating a capacitor within a semiconductor device comprising the steps of forming openings (18, 20) in an oxide dielectric (14) to reach a lower conductor layer (10) which will serve as a lower conductor plate of the capacitor; depositing capacitor electrode material, such as tungsten to fill the openings (18, 20) to form a capacitor electrode (24) and planarizing the filled openings using chemical/mechanical polish; depositing a selected oxide capacitor dielectric (30) over the capacitor electrodes (24) and patterning the capacitor dielectric with photoresist to leave dielectric covering the area of the capacitor electrodes; stripping away the photoresist (32); adding an upper conductor layer (40) on top of the capacitor dielectric to serve as the top plate of the capacitor. The above steps may be repeated to form multiple layers of capacitors within the semiconductor device.

Fig. 1

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