METHOD FOR FORMING HIGH-DENSITY HIGH-CAPACITY CAPACITOR

ABSTRACT

A method for fabricating a high-density high-capacity capacitor is described. A dielectric layer is provided overlying a semiconductor substrate. A sacrificial layer is deposited overlying the dielectric layer and patterned to form a pattern having a large surface area within a small area on the substrate. In one alternative, spacers are formed on sidewalls of the patterned sacrificial layer. Thereafter, the sacrificial layer is removed. A bottom capacitor plate layer is conformally deposited overlying the spacers. In a second alternative, a bottom capacitor plate layer is deposited overlying the patterned sacrificial layer and etched to leave spacers on sidewalls of the patterned sacrificial layer. Thereafter, the sacrificial layer is removed. In both alternatives, a capacitor dielectric layer is deposited overlying the bottom capacitor plate layer. A top capacitor plate layer is deposited overlying the capacitor dielectric layer and patterned to complete fabrication of a high-density high-capacity capacitor.

This Sheet Has Been Replaced

