

ABSTRACT

There is provided a semiconductor device capable of improving the performance and/or reliability of the element, by increasing the capacitance of the capacitor, using a capacitor dielectric film including a ferroelectric material and a paraelectric material. The semiconductor device includes first and second electrodes disposed to be spaced apart from each other, and a capacitor dielectric film disposed between the first electrode and the second electrode and including a first dielectric film and a second dielectric film. The first dielectric film includes one of a first monometal oxide film and a first bimetal oxide film, the first dielectric film has an orthorhombic crystal system, the second dielectric film includes a paraelectric material, and a dielectric constant of the capacitor dielectric film is greater than a dielectric constant of the second dielectric film.

FIG. 2A