ABSTRACT

A capacitor structure includes lower and electrodes, and a capacitor dielectric film interposed therebetween. The lower electrode includes a lower electrode film including a first metal element, a first doped oxide film including a second metal element and an oxide of the first metal element, and a first metal oxide film. The first metal oxide film includes an oxide of the first metal element and is free of the second metal element. The upper electrode includes an upper electrode film including the first metal element, a second doped oxide film including the second metal element and an oxide of the first metal element, and a second metal oxide film that includes an oxide of the first metal element, and is free of the second metal element.

FIG. 1