

SEMICONDUCTOR DEVICE AND METHOD OF FABRICATING THE SAME

ABSTRACT

The present invention provides a semiconductor device and a method of fabricating the same, which includes: providing a semiconductor substrate having a first patterned region and a second patterned region and performing floating-gate poly-Si deposition on the semiconductor substrate thereby forming a first poly-Si layer, wherein the first patterned region has a higher feature density than the second patterned region; performing ion implantation on the first poly-Si layer and forming an oxide layer over a top surface of the first poly-Si layer; with the oxide layer in the second patterned region being protected, etching the oxide layer in the first patterned region; performing a CMP process on the first poly-Si layer in the first patterned region and on the oxide layer and the first poly-Si layer in the second patterned region; and forming the semiconductor device on the basis of the first poly-Si layer that has undergone the CMP process.

Fig. 3