A SEMICONDUCTOR DEVICE COMPRISING FERROELECTRIC ELEMENTS AND FAST HIGH-K METAL GATE TRANSISTORS

ABSTRACT

Ferroelectric circuit elements, such as field effect transistors or capacitors may be formed on the basis of hafnium oxide, which may also be used during the fabrication of sophisticated high-k metal gate electrode structures of fast transistors. To this end, the hafnium-based oxide having appropriate thickness and material composition may be patterned at any appropriate manufacturing stage, without unduly affecting the overall process flow for fabricating a sophisticated high-k metal gate electrode structure.

Figure 1h