

ABSTRACT

SEMICONDUCTOR DEVICE

It is an object to provide a semiconductor device in which power consumption can be reduced. It is another object to provide a highly reliable semiconductor device using a programming cell, such as a programmable logic device (PLD). In accordance with a change in a configuration of connections between basic blocks, power supply voltage furnishing to the basic blocks is changed. That is, when the structure of connections between the basic blocks is such that a basic block does not contribute to a circuit, the supply of the power supply voltage to this basic block is stopped. Further, the supply of the power supply voltage to the basic blocks is controlled using a programming cell formed using a field effect transistor whose channel formation region is formed using an oxide semiconductor, the field effect transistor having extremely low off-state current or extremely low leakage current.

Fig. 2A