

SEMICONDUCTOR DEVICE

Abstract

Disclosed is a semiconductor device capable of functioning as a memory device. The memory device comprises a plurality of memory cells, and each of the memory cells contains a first transistor and a second transistor. The first transistor is provided over a substrate containing a semiconductor material and has a channel formation region in the substrate. The second transistor has an oxide semiconductor layer. The gate electrode of the first transistor and one of the source and drain electrodes of the second transistor are electrically connected to each other. The extremely low off current of the second transistor allows the data stored in the memory cell to be retained for a significantly long time even in the absence of supply of electric power.

Figure 17A