

ABSTRACT

Semiconductor memory devices are provided. A semiconductor memory device includes a substrate. The semiconductor memory device includes a plurality of memory cell transistors vertically stacked on the substrate. The semiconductor memory device includes a first conductive line connected to a source region of at least one of the plurality of memory cell transistors. The semiconductor memory device includes a second conductive line connected to a plurality of gate electrodes of the plurality of memory cell transistors. Moreover, the semiconductor memory device includes a data storage element connected to a drain region of the at least one of the plurality of memory cell transistors.

FIG. 2