

ABSTRACT

Disclosed are semiconductor memory devices and methods of fabricating the same. The semiconductor memory devices may include a plurality of layers sequentially stacked on a substrate in a vertical direction, each of the plurality of layers including a bit line extending in a first direction and a semiconductor pattern extending from the bit line in a second direction traversing the first direction, a gate electrode extending through the plurality of layers and including a vertical portion extending through the semiconductor patterns and a first horizontal portion extending from the vertical portion and facing a first surface of one of the semiconductor patterns, and a data storing element electrically connected to the one of the semiconductor patterns. The data storing element includes a first electrode electrically connected to the one of the semiconductor patterns, a second electrode on the first electrode, and a dielectric layer between the first and second electrodes.

FIG. 4A