

ABSTRACT

Each of memory blocks of a nonvolatile memory device includes first memory cells of a first portion of pillar and second memory cells of a second portion of the pillar. When performing program operations based on consecutive addresses at a memory block selected from the memory blocks, the nonvolatile memory device sequentially completes first program operations of non-adjacent memory cells not adjacent to a boundary of the first portion and the second portion from among the first and second memory cells and then completes a second program operation of an adjacent memory cell adjacent to the boundary.

FIG. 6