

ABSTRACT

A nonvolatile memory device includes a mold structure including a plurality of insulating patterns and a plurality of gate electrodes alternately stacked on a substrate, a semiconductor pattern penetrating through the mold structure and contacting the substrate, a
5 first charge storage film, and a second charge storage film separated from the first charge storage film. The first and second charge storage films are disposed between each of the gate electrodes and the semiconductor pattern. Each of the gate electrodes includes a first recess and a second recess which are respectively recessed inward from a side surface of the gate electrodes. The first charge storage film fills at least a portion of the first recess, and the
10 second charge storage film fills at least a portion of the second recess.

FIG. 3