

ABSTRACT OF THE DISCLOSURE

A semiconductor memory device includes a peripheral logic structure including peripheral circuits on a substrate, a horizontal semiconductor layer extending along a top surface of the peripheral logic structure, a plurality of stack structures arranged on the horizontal semiconductor layer along a first direction, and a plurality of electrode separation regions in each of the plurality of stack structures to extend in a second direction, which is different from the first direction, wherein each of the plurality of stack structures includes a first electrode pad and a second electrode pad on the first electrode pad, the first electrode pad protruding in the first direction beyond the second electrode pad by a first width, and the first electrode pad protrudes in the second direction beyond the second electrode pad by a second width, which is different from the first width.

FIG. 4