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SHIN et al.(10) **Pub. No.: US 2024/0251553 A1**(43) **Pub. Date: Jul. 25, 2024**(54) **SEMICONDUCTOR MEMORY DEVICE AND METHOD OF FABRICATING THE SAME**(71) Applicant: **Samsung Electronics Co., Ltd.**,
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(57)

ABSTRACT

A semiconductor memory device includes a stack structure on a substrate, extending in a first direction, and including gate electrode layers and insulating layers stacked alternately with each other, a vertical structure including a vertical channel film extending in a second direction crossing the first direction and a channel insulating film disposed on the vertical channel film and having first areas adjacent to the insulating layers and second areas adjacent to the gate electrode layers, and a high-k film on the channel insulating film. The high-k film includes a first high-k metal oxide film between the first areas and the insulating layers and in contact with the first areas and a second high-k metal oxide film between the second areas and the gate electrode layers and in contact with the second areas, and the first and second high-k metal oxide films include different metal materials.

