



US 20240179888A1

(19) **United States**

(12) **Patent Application Publication**
YONG et al.

(10) **Pub. No.: US 2024/0179888 A1**

(43) **Pub. Date: May 30, 2024**

(54) **SEMICONDUCTOR MEMORY DEVICES**

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(21) Appl. No.: **18/492,093**

(22) Filed: **Oct. 23, 2023**

(30) **Foreign Application Priority Data**

Nov. 25, 2022 (KR) 10-2022-0160679

Publication Classification

(51) **Int. Cl.**
H10B 12/00 (2006.01)

(52) **U.S. Cl.**

CPC **H10B 12/30** (2023.02); **H10B 12/03**
(2023.02); **H10B 12/05** (2023.02)

(57) **ABSTRACT**

A semiconductor memory device includes a source layer, a semiconductor layer including a semiconductor protrusion structure, and a drain layer arranged in a first horizontal direction on a substrate, a cell capacitor extending in the first horizontal direction on the substrate and including a lower electrode layer, a capacitor dielectric film, and an upper electrode layer connected to the drain layer, a bit line extending in a vertical direction on the substrate and connected to the source layer, and a gate structure covering the semiconductor protrusion structure and including a gate dielectric film on the semiconductor protrusion structure and a gate electrode film on the gate dielectric film. A value of a first thickness of an end portion of the semiconductor protrusion structure facing the drain layer is greater than a value of a second thickness of another end portion of the semiconductor protrusion structure facing the source layer.

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