

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0244838 A1 Chuang et al.

Jul. 18, 2024

(43) **Pub. Date:**

(54) MEMORY DEVICE AND METHOD OF MANUFACTURING THE SAME

(71) Applicant: Winbond Electronics Corp., Taichung City (TW)

Inventors: Che-Fu Chuang, Taichung City (TW);

Yao-Ting Tsai, Taichung City (TW); Hsiu-Han Liao, Taichung City (TW)

(73) Assignee: Winbond Electronics Corp., Taichung City (TW)

(21) Appl. No.: 18/617,590

(22) Filed: Mar. 26, 2024

Related U.S. Application Data

(62) Division of application No. 17/564,259, filed on Dec. 29, 2021, now Pat. No. 11,974,428.

Publication Classification

(51) **Int. Cl.** H10B 41/30 (2023.01)H01L 29/40 (2006.01)

H01L 29/417 (2006.01)H01L 29/66 (2006.01)(2006.01)H01L 29/788

(52) U.S. Cl.

CPC H10B 41/30 (2023.02); H01L 29/401 (2013.01); H01L 29/41725 (2013.01); H01L 29/66825 (2013.01); H01L 29/7883 (2013.01)

(57)ABSTRACT

Provided are a memory device and a method of manufacturing the same. The memory device includes: a stack structure; a first source/drain region and a second source/ drain region located in a substrate beside the stack structure; a first self-aligned contact connected to the first source/drain region; a second self-aligned contact connected to the second source/drain region; a first liner structure located between the first self-aligned contact and a first sidewall of the stack structure; and a second liner structure located between the second self-aligned contact and a second sidewall of the stack structure. The first liner structure and the second liner structure are not connected and do not cover the stack structure.

