

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0213173 A1 Takahashi

Jun. 27, 2024

(54) ALIGNMENT PATTERN HAVING AN E **SHAPE**

- (71) Applicant: Micron Technology, Inc., Boise, ID
- Chinaru Takahashi, Higashihiroshima Inventor: (JP)
- Assignee: Micron Technology, Inc., Boise, ID
- (21) Appl. No.: 18/481,133
- (22) Filed: Oct. 4, 2023

Related U.S. Application Data

Provisional application No. 63/476,603, filed on Dec. 21, 2022.

Publication Classification

(51) Int. Cl. H01L 23/544 (2006.01)

(43) **Pub. Date:**

U.S. Cl. CPC .. H01L 23/544 (2013.01); H01L 2223/54426

(57)ABSTRACT

An apparatus includes an alignment pattern which comprises: a first line portion of a first material extending in a first direction; a second line portion of the first material extending in the first direction in parallel to the first line portion; a third line portion of the first material extending in a second direction perpendicular to the first direction such that the third line portion connects an edge of the first line portion and an edge of the second line portion; and a fourth line portion of a second material arranged between the first line portion and the second line portion and extending in the first direction.

