

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0230976 A1 CHEN et al.

Jul. 20, 2023 (43) **Pub. Date:**

(54) SEMICONDUCTOR STRUCTURE

(71) Applicant: Taiwan Semiconductor Manufacturing Company, Ltd., Hsinchu (TW)

Inventors: Chia-Cheng CHEN, Hsin-chu City (TW); Chia-Ling CHAN, New Taipei City (TW); Liang-Yin CHEN, Hsinchu

City (TW)

(73) Assignee: Taiwan Semiconductor Manufacturing Company, Ltd., Hsinchu (TW)

City (TW); Huicheng CHANG, Tainan

(21) Appl. No.: 18/186,405

(22) Filed: Mar. 20, 2023

Related U.S. Application Data

(60) Continuation of application No. 16/924,541, filed on Jul. 9, 2020, now Pat. No. 11,610,885, which is a division of application No. 15/652,719, filed on Jul. 18, 2017, now Pat. No. 10,727,226.

Publication Classification

(51) Int. Cl. H01L 27/088 (2006.01)H01L 29/06 (2006.01)

H01L 21/8234	(2006.01)
H01L 29/66	(2006.01)
H01L 21/8238	(2006.01)
H01L 27/092	(2006.01)
H01L 29/78	(2006.01)

(52) U.S. Cl.

CPC H01L 27/0886 (2013.01); H01L 21/823418 (2013.01); H01L 21/823431 (2013.01); H01L 21/823468 (2013.01); H01L 21/823481 (2013.01); H01L 21/823814 (2013.01); H01L 21/823821 (2013.01); H01L 27/0924 (2013.01); H01L 29/0649 (2013.01); H01L 29/785 (2013.01); H01L 29/66545 (2013.01); H01L 27/1211 (2013.01)

(57)**ABSTRACT**

A semiconductor structure is provided. The semiconductor structure includes a gate structure over a substrate. The semiconductor structure also includes a gate spacer on a sidewall of the gate structure. The semiconductor structure also includes a source/drain feature adjacent to the gate structure. The semiconductor structure also includes a doped region extending along a bottom surface of the gate spacer. The source/drain feature has a curved sidewall connecting a top surface of the doped region and a bottom surface of the doped region.

