

Title (en)

SHIELD CONTACT LAYOUT FOR POWER MOSFETS

Title (de)

ABSCHIRMUNGSKONTAKTANORDNUNG FÜR LEISTUNGS-MOSFETS

Title (fr)

AGENCEMENT DE CONTACT DE BLINDAGE POUR MOSFETS DE PUISSANCE

Publication

EP 4295408 A1 20231227 (EN)

Application

EP 22715957 A 20220323

Priority

- US 202163166242 P 20210326
- US 202217655579 A 20220321
- US 2022071278 W 20220323

Abstract (en)

[origin: WO2022204691A1] A method includes defining a plurality of trenches (101, 101-1, 101-2, 102-3, 10-4, 101-c, 101-L, 101-M, 101-U) of a first type that extend in a longitudinal direction in a semiconductor substrate, and defining a trench (105, 105-1, 105-2, 105-3, 105-4) of a second type extending in a lateral direction and intersecting the plurality of trenches (101, 101-1, 101-2, 102-3, 10-4, 101-c, 101-L, 101-M, 101-U) of the first type. The trench (105, 105-1, 105-2, 105-3, 105-4) of the second type is in fluid communication with each of the intersected plurality of trenches (101, 101-1, 101-2, 102-3, 10-4, 101-c, 101-L, 101-M, 101-U) of the first type. The method further includes disposing a shield poly layer (111) in the plurality of trenches (101, 101-1, 101-2, 102-3, 10-4, 101-c, 101-L, 101-M, 101-U) of the first type and the trench (105, 105-1, 105-2, 105-3, 105-4) of the second type, disposing an inter-poly dielectric layer (112) and a gate poly layer (108) above the shield poly layer (111) in the plurality of trenches (101, 101-1, 101-2, 102-3, 10-4, 101-c, 101-L, 101-M, 101-U) of the first type and the trench (105, 105-1, 105-2, 105-3, 105-4) of the second type, and forming an electrical contact to the shield poly layer (111) through an opening (106, 16) in the inter-poly dielectric layer (112) and the gate poly layer (108) disposed in the trench of the second type.

IPC 8 full level

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CPC (source: EP KR)

H01L 29/0696 (2013.01 - EP KR); **H01L 29/407** (2013.01 - EP KR); **H01L 29/66734** (2013.01 - EP KR); **H01L 29/7813** (2013.01 - EP KR)

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