

Title (en)

SEMICONDUCTOR DEVICE AND METHOD FOR PRODUCING A SEMICONDUCTOR DEVICE

Title (de)

HALBLEITERVORRICHTUNG UND VERFAHREN ZUM HERSTELLEN EINER HALBLEITERVORRICHTUNG

Title (fr)

DISPOSITIF À SEMI-CONDUCTEUR ET PROCÉDÉ DE FABRICATION D'UN DISPOSITIF À SEMI-CONDUCTEUR

Publication

EP 4018481 A1 20220629 (DE)

Application

EP 20760435 A 20200819

Priority

- DE 102019212649 A 20190823
- EP 2020073213 W 20200819

Abstract (en)

[origin: WO2021037637A1] A semiconductor device (1) is provided. The semiconductor device (1) can comprise a drift region (11, 111, 13, 14, 15) of a first conductivity type, a channel region (8, 108) of a second conductivity type on the drift region (11, 111, 13, 14, 15), wherein the second conductivity type is opposite to the first conductivity type, a source region (9, 109) of the first conductivity type on the channel region (8, 108), a trench (5) forming an insulated gate and extending through the source region (9, 109) and the channel region (8, 108), such that the bottom of said trench is situated in the drift region (11, 111, 13, 14, 15), and at least one buried region (12) of the second conductivity type, which extends within the drift region (11, 111, 13, 14, 15) from an edge region of the drift region (11, 111, 13, 14, 15) to the trench (5) and is in direct contact with a first portion (32) of a surface of the trench (5), wherein a second portion (34) of a surface of the trench (5) is in direct contact with the drift region (11, 111, 13, 14, 15), and wherein the buried region (12) is electrically conductively connected to the source region (9, 109).

IPC 8 full level

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CPC (source: CN EP US)

H01L 29/0623 (2013.01 - CN EP); **H01L 29/0696** (2013.01 - CN); **H01L 29/0878** (2013.01 - CN EP); **H01L 29/1095** (2013.01 - CN EP); **H01L 29/1608** (2013.01 - CN); **H01L 29/66068** (2013.01 - CN EP US); **H01L 29/66734** (2013.01 - CN EP US); **H01L 29/7813** (2013.01 - CN EP US); **H01L 29/0696** (2013.01 - EP); **H01L 29/1608** (2013.01 - EP)

Citation (search report)

See references of WO 2021037637A1

Designated contracting state (EPC)

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DOCDB simple family (application)

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