Title (en)

TRANSISTOR CELL HAVING AN IMPLANTED EXPANSION REGION

Title (de)

TRANSISTORZELLE MIT IMPLANTIERTEM AUFWEITUNGSGEBIET

Title (fr)

CELLULE DE TRANSISTOR COMPRENANT UNE ZONE D'ÉLARGISSEMENT IMPLANTÉE

Publication

EP 3977515 A1 20220406 (DE)

Application

EP 20728423 A 20200518

Priority

- DE 102019207758 A 20190527
- EP 2020063772 W 20200518

Abstract (en)

[origin: WO2020239488A1] The invention relates to a transistor cell (100), comprising a semiconductor substrate (101), which has a front side and a rear side, wherein: the front side is opposite the rear side; an epitaxial layer (102) is arranged on the front side; channel regions (103) are arranged on the epitaxial layer (102) and source regions (104) are arranged on the channel regions (103); a trench (105) and field shielding regions (108) extend from the front side of the semiconductor substrate (101) into the epitaxial layer (102); the field shielding regions (108) are each arranged at a lateral distance from the trench (105), and the trench (105) has a smaller depth than the field shielding regions (108), characterized in that an implanted expansion region (112) having a certain thickness is arranged below the trench (105).

IPC 8 full level

H01L 29/08 (2006.01); **H01L 29/10** (2006.01); **H01L 29/66** (2006.01); **H01L 29/78** (2006.01)

CPC (source: EP US)

H01L 21/7602 (2013.01 - US); **H01L 21/7605** (2013.01 - US); **H01L 21/761** (2013.01 - US); **H01L 29/063** (2013.01 - US); **H01L 29/0696** (2013.01 - US); **H01L 29/0878** (2013.01 - EP); **H01L 29/1095** (2013.01 - EP US); **H01L 29/1608** (2013.01 - US); **H01L 29/2003** (2013.01 - US); **H01L 29/66068** (2013.01 - US); **H01L 29/66522** (2013.01 - US); **H01L 29/66734** (2013.01 - EP US); **H01L 29/7813** (2013.01 - EP US); H01L 29/1608 (2013.01 - EP); H01L 29/2003 (2013.01 - EP)

Citation (search report)

See references of WO 2020239488A1

Designated contracting state (EPC)

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Designated extension state (EPC)

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DOCDB simple family (publication)

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