

Title (en)

VERTICAL FIELD-EFFECT TRANSISTOR AND METHOD FOR FORMING SAME

Title (de)

VERTIKALER FELDEFFEKTTRANSISTOR UND VERFAHREN ZUM AUSBILDEN DESSELBEN

Title (fr)

TRANSISTOR À EFFET DE CHAMP VERTICAL ET SON PROCÉDÉ DE FORMATION

Publication

EP 4049317 A1 20220831 (DE)

Application

EP 20776124 A 20200921

Priority

- DE 102019216138 A 20191021
- EP 2020076293 W 20200921

Abstract (en)

[origin: WO2021078451A1] The invention relates to a vertical field effect transistor (200) comprising: a drift region (212) having a first conductivity type, a semiconductor fin (302) that is on or above the drift region (212), a source/drain electrode (202) that is on or above the semiconductor fin (212) and a shielding structure (214) that is arranged laterally adjacent to the at least one lateral wall of the semi-conductor fin (302) in the drift region (212). The shielding structure (214) has a second conductivity type which is different from the first conductivity type and the semi-conductor fin (302) is connected in an electrically conductive manner to the source/drain electrode (202).

IPC 8 full level

H01L 29/06 (2006.01); **H01L 29/78** (2006.01)

CPC (source: CN EP US)

H01L 29/0619 (2013.01 - CN EP); **H01L 29/0623** (2013.01 - CN EP); **H01L 29/0847** (2013.01 - US); **H01L 29/1041** (2013.01 - US); **H01L 29/1095** (2013.01 - US); **H01L 29/1608** (2013.01 - CN); **H01L 29/2003** (2013.01 - CN); **H01L 29/66068** (2013.01 - CN); **H01L 29/66666** (2013.01 - CN EP); **H01L 29/66795** (2013.01 - US); **H01L 29/7827** (2013.01 - US); **H01L 29/7828** (2013.01 - CN EP); **H01L 29/785** (2013.01 - US); **H01L 29/1608** (2013.01 - EP); **H01L 29/2003** (2013.01 - EP); **H01L 29/66068** (2013.01 - EP)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

DE 102019216138 A1 20210422; CN 114586173 A 20220603; EP 4049317 A1 20220831; JP 2022553281 A 20221222; JP 7471403 B2 20240419; US 2022416028 A1 20221229; WO 2021078451 A1 20210429

DOCDB simple family (application)

DE 102019216138 A 20191021; CN 202080073919 A 20200921; EP 2020076293 W 20200921; EP 20776124 A 20200921; JP 2022523325 A 20200921; US 202017762993 A 20200921