

Title (en)  
GATE STRUCTURE AND METHOD FOR PRODUCING SAME

Title (de)  
GATE-STRUKTUR UND VERFAHREN ZU DESSEN HERSTELLUNG

Title (fr)  
STRUCTURE DE GRILLE ET SON PROCÉDÉ DE FABRICATION

Publication  
**EP 3529836 A1 20190828 (DE)**

Application  
**EP 17807785 A 20171120**

Priority  
• DE 102016122399 A 20161121  
• EP 2017079707 W 20171120

Abstract (en)  
[origin: WO2018091699A1] The present invention relates to a gate structure and to a method for producing same. In particular, the present invention relates to the gate structuring of a field effect transistor having reduced thermomechanical loading and increased reliability (reduced electromigration or diffusion of the gate metal). The gate structure according to the invention comprises a substrate (10); an active layer (20) arranged on the substrate (10); an intermediate layer (40) arranged on the active layer (20), wherein the intermediate layer (40) has a cutout (45) extending through the entire intermediate layer (40) in the direction of the active layer (20); and a contact element (50) arranged within the cutout (45), wherein the contact element (50) completely fills the cutout (45) and extends to above the intermediate layer (40), wherein the contact element (50), at least in sections, bears directly on the intermediate layer (40); wherein the contact element (50) is constructed from a Schottky metal (52) and the contact element (50) has internally a cavity (55) enclosed completely by the Schottky metal (52).

IPC 8 full level  
**H01L 29/423** (2006.01); **H01L 21/285** (2006.01)

CPC (source: EP KR US)  
**H01L 21/28581** (2013.01 - EP KR); **H01L 21/28587** (2013.01 - EP KR); **H01L 21/823437** (2013.01 - KR); **H01L 29/2003** (2013.01 - KR); **H01L 29/42316** (2013.01 - EP KR); **H01L 29/66446** (2013.01 - US); **H01L 29/8128** (2013.01 - US); **H01L 29/20** (2013.01 - EP); **H01L 29/2003** (2013.01 - EP)

Citation (search report)  
See references of WO 2018091699A1

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)  
**WO 2018091699 A1 20180524**; DE 102016122399 A1 20180524; EP 3529836 A1 20190828; JP 2020513688 A 20200514; JP 7050063 B2 20220407; KR 20190084060 A 20190715; US 11127863 B2 20210921; US 2020066919 A1 20200227

DOCDB simple family (application)  
**EP 2017079707 W 20171120**; DE 102016122399 A 20161121; EP 17807785 A 20171120; JP 2019527189 A 20171120; KR 20197014604 A 20171120; US 201716462650 A 20171120