

Title (en)

GROUP III-NITRIDE HIGH-ELECTRON MOBILITY TRANSISTORS WITH BURIED P-TYPE LAYERS AND PROCESS FOR MAKING THE SAME

Title (de)

GRUPPE-III-NITRID-TRANSISTOREN MIT HOHER ELEKTRONENBEWEGLICHKEIT MIT VERGRABENEN P-SCHICHTEN UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)

TRANSISTORS À MOBILITÉ D'ÉLECTRONS ÉLEVÉE AU NITRURE DU GROUPE III AVEC COUCHES DE TYPE P ENFOUIES ET LEUR PROCÉDÉ DE FABRICATION

Publication

EP 3918636 A1 20211208 (EN)

Application

EP 20749178 A 20200128

Priority

- US 201916260095 A 20190128
- US 201916376596 A 20190405
- US 2020015331 W 20200128

Abstract (en)

[origin: WO2020159934A1] An apparatus includes a substrate. The apparatus further includes a group III-nitride buffer layer on the substrate; a group III-nitride barrier layer on the group III-nitride buffer layer, the group III-nitride barrier layer including a higher bandgap than a bandgap of the group III-nitride buffer layer. The apparatus further includes a source electrically coupled to the group III-nitride barrier layer; a gate electrically coupled to the group III-nitride barrier layer; a drain electrically coupled to the group III-nitride barrier layer; and a p-region being at least one of the following: in the substrate or on the substrate below said group III-nitride barrier layer.

IPC 8 full level

H01L 29/20 (2006.01); **H01L 29/778** (2006.01); **H01L 29/40** (2006.01); **H01L 29/417** (2006.01); **H01L 29/423** (2006.01); **H01L 29/66** (2006.01)

CPC (source: EP KR)

H01L 29/1075 (2013.01 - EP KR); **H01L 29/2003** (2013.01 - KR); **H01L 29/402** (2013.01 - KR); **H01L 29/423** (2013.01 - EP); **H01L 29/66462** (2013.01 - KR); **H01L 29/7783** (2013.01 - EP); **H01L 29/7787** (2013.01 - EP KR); **H01L 29/0843** (2013.01 - EP); **H01L 29/167** (2013.01 - EP); **H01L 29/2003** (2013.01 - EP); **H01L 29/402** (2013.01 - EP); **H01L 29/41766** (2013.01 - EP); **H01L 29/8124** (2013.01 - EP)

Designated contracting state (EPC)

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Designated extension state (EPC)

BA ME

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