Title (en)

Power high election mobility structure.

Title (de)

Hochelektronengeschwindigkeits-Leistungstransistorstruktur.

Title (fr)

Structure de transistor de puissance, à haute mobilité électronique.

Publication

EP 0314877 A1 19890510 (DE)

Application

EP 88111246 A 19880713

Priority

US 8375187 A 19870807

Abstract (en)

A modulating-doped field effect transistor comprises a substantially undoped channel layer (10), a n-doped wide bandgap donor layer (12) and a relatively heavily doped cap layer (14). It further comprises a gate recess (17) through a top insulating layer (16), having a cross-section in the cap layer (14) increasing down to the interface with the donor layer (12) and thereafter having a cross-section in said donor layer (12) decreasing down to the bottom of the recess (12) in said donor layer. A Schottky gate electrode (24) which does not occupy the portions of the recess (17) in the undercut part is formed in said recess (17) using the insulating layer (16) as a shadow mask.

IPC 1-7

H01L 21/28; H01L 21/306; H01L 29/205; H01L 29/64; H01L 29/80

IPC 8 full level

H01L 29/812 (2006.01); **H01L 21/285** (2006.01); **H01L 21/306** (2006.01); **H01L 21/335** (2006.01); **H01L 21/338** (2006.01); **H01L 29/423** (2006.01); **H01L 29/778** (2006.01)

CPC (source: EP US)

H01L 21/28587 (2013.01 - EP US); **H01L 21/30621** (2013.01 - EP US); **H01L 29/42316** (2013.01 - EP US); **H01L 29/66462** (2013.01 - EP US); **H01L 29/7787** (2013.01 - EP US)

Citation (search report)

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Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

US 4774555 A 19880927; EP 0314877 A1 19890510; JP H0289324 A 19900329

DOCDB simple family (application)

US 8375187 A 19870807; EP 88111246 A 19880713; JP 19429988 A 19880802