Title (en)

METHOD FOR PRODUCING A BIPOLAR TRANSISTOR COMPRISING A POLYSILICON EMITTER

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES BIPOLARTRANSISTORS MIT POLYSILIZIUMEMITTER

Title (fr)

PROCEDE DE PRODUCTION D'UN TRANSISTOR BIPOLAIRE DOTE D'UN EMETTEUR POLYSILICIUM

Publication

EP 1407484 A2 20040414 (DE)

Application

EP 02753085 A 20020710

Priority

- DE 10134089 A 20010713
- EP 0208234 W 20020710

Abstract (en)

[origin: WO03007361A2] The invention relates to a method for producing a bipolar transistor comprising a polysilicon emitter, according to which a collector region of a first conductivity type and an adjacent base region of a second conductivity type are created. At least one layer consisting of an insulating material is then applied, said layer or layers being structured in such a way that at least one section of the base region is exposed. A layer consisting of a polycrystalline semiconductor material of the first conductivity type, which is highly doped with doping atoms, is subsequently created, in such a way that the exposed section is essentially covered. A second layer consisting of a highly conductive material is then created on the layer consisting of the polycrystalline semiconductor material, forming a dual-layer emitter with the latter. At least one portion of the doping atoms of the first conductivity type of the highly doped polycrystalline semiconductor layer is then caused to diffuse into the base region, to create an emitter region of the first conductivity type.

IPC 1-7

H01L 21/331; H01L 29/737

IPC 8 full level

H01L 21/331 (2006.01); H01L 21/225 (2006.01)

CPC (source: EP KR US)

H01L 29/66272 (2013.01 - EP US); **H01L 29/73** (2013.01 - KR); H01L 21/2257 (2013.01 - EP US)

Citation (search report)

See references of WO 03007361A2

Citation (examination)

- US 4729965 A 19880308 - TAMAKI YOICHI [JP], et al
- DE PONTCHARRA J. ET AL: "A 30-GHz fT Quasi-Self-Aligned Single-Poly Bipolar Technology", IEEE TRANSACTIONS ON ELECTRON DEVICES, vol. 44, no. 11, November 1997 (1997-11-01), NEW YORK, US, pages 2091 - 2096, XP000722084, DOI: doi:10.1109/16.641389
- SUGIYAMA M. ET AL: "A 40GHz fT Si Bipolar Transistor LSI Technology", PROCEEDINGS OF THE INTERNATIONAL ELECTRON DEVICES MEETING, WASHINGTON, DEC. 3-6, 1989, December 1989 (1989-12-01), NEW YORK, US, pages 221 - 224, XP032358822, DOI: doi:10.1109/IEDM.1989.74265
- AOYAMA T. ET AL: "Selective Polysilicon Deposition (SPD) by Hot-Wall LPCVD and its Application to High Speed Bipolar Devices", JAPANESE JOURNAL OF APPLIED PHYSICS, 1990, TOKYO, JAPAN, pages 665 - 668, XP000178106

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

WO 03007361 A2 20030123; **WO 03007361 A3 20030424**; CN 100362636 C 20080116; CN 1528013 A 20040908; DE 10134089 A1 20030130; EP 1407484 A2 20040414; KR 20040013146 A 20040211; TW 554488 B 20030921; US 2004185631 A1 20040923; US 7060583 B2 20060613

DOCDB simple family (application)

EP 0208234 W 20020710; CN 02814101 A 20020710; DE 10134089 A 20010713; EP 02753085 A 20020710; KR 20047000535 A 20020710; TW 91115532 A 20020712; US 75736004 A 20040113