Title (en)

INTEGRATED CIRCUIT COMPRISING VERTICAL TRANSISTORS, AND A METHOD FOR THE PRODUCTION THEREOF

Title (de)

INTEGRIERTE SCHALTUNGSANORDNUNG MIT VERTIKALTRANSISTOREN UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)

ENSEMBLE CIRCUIT INTEGRE COMPORTANT DES TRANSISTORS VERTICAUX, ET SON PROCEDE DE PRODUCTION

Publication

EP 1116270 A1 20010718 (DE)

Application

EP 99955764 A 19990922

Priority

- DE 9903031 W 19990922
- DE 19844083 A 19980925

Abstract (en)

[origin: WO0019529A1] The transistor is configured as a vertical MOS transistor and comprises a series of layers (SF, SF*) which is arranged on a substrate (1) doped with a first type of conductivity. Said series of layers has a lower layer (U) for a first source/drain region, a middle layer (M) which is doped with a first type of conductivity and which is provided for a channel region, and has an upper layer (O) for a second source/drain region. A connecting structure (V) which is doped with a first type of conductivity is arranged on at least one first surface of the series of layers (SF, SF*) in order to electrically connect the channel region to the substrate (1). A gate electrode of the transistor is arranged on at least one second surface of the series of layers (SF, SF*). The connecting structure (V) can be arranged between the series of layers (SF, SF*) and another series of layers (SF, SF*) which can belong to the same or another transistor. The dimensions of the connecting structure (V) and of the series of layers (SF, SF*) can be sublithographic. The production results in a self-adjusting manner. The circuit is suited as a storage cell arrangement having a high packing density.

IPC 1-7

H01L 21/8242; H01L 21/8246; H01L 21/8239; H01L 27/108; H01L 27/112

IPC 8 full level

H01L 21/8234 (2006.01); **H01L 21/336** (2006.01); **H01L 27/04** (2006.01); **H01L 27/088** (2006.01); **H01L 29/78** (2006.01); **H10B 12/00** (2023.01); **H10B 20/00** (2023.01); **H10B 99/00** (2023.01)

CPC (source: EP KR US)

H10B 12/053 (2023.02 - EP KR US); **H10B 12/34** (2023.02 - EP US); **H10B 20/00** (2023.02 - EP US); **H10B 20/40** (2023.02 - EP US)

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