

Title (en)

A SEMICONDUCTOR DEVICE HAVING A SELF-ALIGNED P-WELL WITHIN A P-BURIED-LAYER

Title (de)

HALBLEITERANORDNUNG MIT EINER SELBSTJUSTIERTEN P-WANNE INNERHALB EINER VERGRABENEN P-SCHICHT

Title (fr)

DISPOSITIF A SEMI-CONDUCTEUR A CAISSON DE TYPE P AUTO-ALIGNE DANS UNE COUCHE ENTERREE DE TYPE P

Publication

**EP 0698283 A1 19960228 (EN)**

Application

**EP 95911124 A 19950227**

Priority

- US 9502467 W 19950227
- US 21362194 A 19940315

Abstract (en)

[origin: WO9525342A1] A self-aligned, maskless method of forming a p-well is accomplished by implanting a fast p-type diffuser into a p+ buried layer, prior to epitaxial growth. This way the p-well is self-aligned with the p+ buried layer because one mask is used to define both, and the need for a separate p-well mask is eliminated. The fast diffuser, such as aluminum (Al), diffuses toward the silicon surface during the various thermal steps of the process such as epitaxial growth, field oxidation, sinker diffusion, and final drive-in, etc. The dosage of aluminum used and the parameters of the thermal drive determines the p-well doping level. Similarly, an n-well can also be formed in an n-type buried layer in a self-aligned fashion.

IPC 1-7

**H01L 21/74**; **H01L 21/8249**; **H01L 27/06**

IPC 8 full level

**H01L 21/74** (2006.01); **H01L 21/8238** (2006.01); **H01L 21/8249** (2006.01)

CPC (source: EP KR)

**H01L 21/74** (2013.01 - EP KR); **H01L 21/823892** (2013.01 - EP); **H01L 21/8249** (2013.01 - EP); **H01L 27/06** (2013.01 - KR)

Citation (search report)

See references of WO 9525342A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**WO 9525342 A1 19950921**; EP 0698283 A1 19960228; KR 960702939 A 19960523

DOCDB simple family (application)

**US 9502467 W 19950227**; EP 95911124 A 19950227; KR 19950705103 A 19951115