

2003021755

17/04/03

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

162162

(43) International Publication Date
10 May 2002 (10.05.2002)

PCT

(10) International Publication Number
WO 02/37547 A1(51) International Patent Classification⁷: H01L 21/266,
21/336, 21/8238, 27/092

(21) International Application Number: PCT/SE01/02405

(22) International Filing Date:
1 November 2001 (01.11.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0004027-9 3 November 2000 (03.11.2000) SE

(71) Applicant: TELEFONAKTIEBOLAGET LM ERICSSON [SE/SE]; S-126 25 STOCKHOLM (SE).

(72) Inventors: SÖDERBÄRG, Anders; Matrosvägen 9, S-761 41 NORRTÄLJE (SE). OLOFSSON, Peter; Stockby Höllar 4, S-179 62 STENHAMRA (SE). LITWIN, Andrej; Edsviksvägen 89, S-182 35 DANDERYD (SE).

(74) Agents: FRITZON, Rolf et al.; Kransell & Wennborg AB, Box 27834, S-115 93 Stockholm (SE).

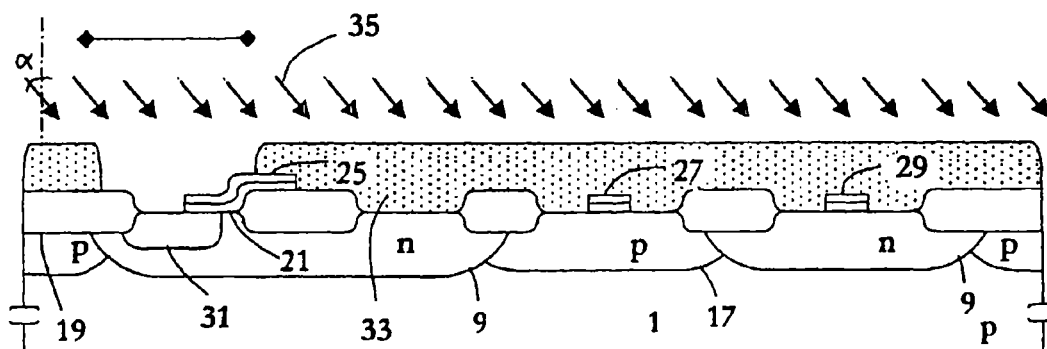
(81) Designated States (*national*): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EC, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: INTEGRATION OF HIGH VOLTAGE SELF-ALIGNED MOS COMPONENTS



(57) Abstract: The invention relates to a method for forming a high voltage NMOS transistor together with a low voltage NMOS transistor and a low voltage PMOS transistor, respectively, in an n-well CMOS process by adding solely two additional process steps to a conventional CMOS process: (i) a masking step, and (ii) an ion implantation step for forming a doped channel region (31) for the high voltage MOS transistor in the substrate (1) self-aligned to the edge of the high voltage MOS transistor gate region (25). The ion implantation (35) is performed through the mask (33) in a direction, which is inclined at an angle (α) to the normal of the substrate surface, to thereby create the doped channel region partly underneath the gate region of the high voltage MOS transistor.

WO 02/37547 A1



ACTION