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

(19) World Intellectual Property Organization
International Bureau

162162

(43) International Publication Date
13 December 2001 (13.12.2001)

PCT

(10) International Publication Number
WO 01/95369 A2

(51) International Patent Classification[7]: H01L

(21) International Application Number: PCT/GB01/02273

(22) International Filing Date: 23 May 2001 (23.05.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/589,719 8 June 2000 (08.06.2000) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

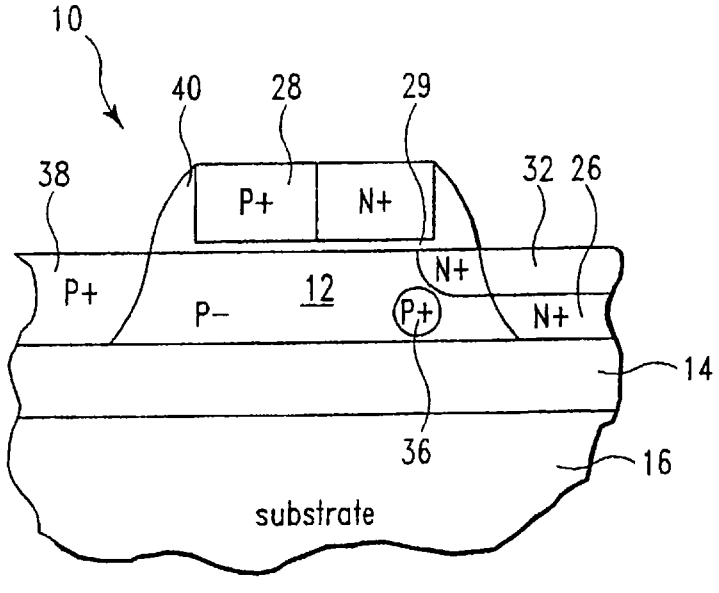
(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

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.

G00002

(54) Title: HALO-FREE NON-RECTIFYING CONTACT ON CHIP WITH HALO SOURCE/DRAIN DIFFUSION



(57) Abstract: A semiconductor chip includes a semiconductor substrate having a rectifying contact diffusion and a non-rectifying contact diffusion. A halo diffusion is adjacent the rectifying contact diffusion and no halo diffusion is adjacent the non-rectifying contact diffusion. The rectifying contact diffusion can be a source/drain diffusion of an FET to improve resistance to punch-through. The non-rectifying contact diffusion may be an FET body contact, a lateral diode contact, or a resistor or capacitor contact. Avoiding a halo for non-rectifying contacts reduces series resistance and improves device characteristics. In another embodiment on a chip having devices with halos adjacent diffusions, no halo diffusion is adjacent a rectifying contact diffusion of a lateral diode, significantly improving ideality of the diode and increasing breakdown voltage.

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