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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 September 2006 (14.09.2006)

PCT

(10) International Publication Number
WO 2006/096380 A1

(51) International Patent Classification:
H01L 21/8238 (2006.01) *H01L 21/84* (2006.01)

(21) International Application Number:
PCT/US2006/006936

(22) International Filing Date:
28 February 2006 (28.02.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/075,774 7 March 2005 (07.03.2005) US

(71) Applicant *(for all designated States except US)*: **ADVANCED MICRO DEVICES, INC.** [US/US]; One AMD Place, Mail Stop 68, P.O. Box 3453, Sunnyvale, California 94088-3453 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **WAITE, Andrew, M.** [GB/US]; 3603 Chelsea Cove South, Hopewell Junction, New Jersey 12533 (US). **LUNING, Scott** [US/US]; 83 S. Hamilton Street, #2, Poughkepsie, New York 12601 (US).

(74) Agent: **DRAKE, Paul, S.**; ADVANCED MICRO DEVICES, INC., 5204 East Ben White Boulevard, Mail Stop 562, Austin, Texas 78741 (US).

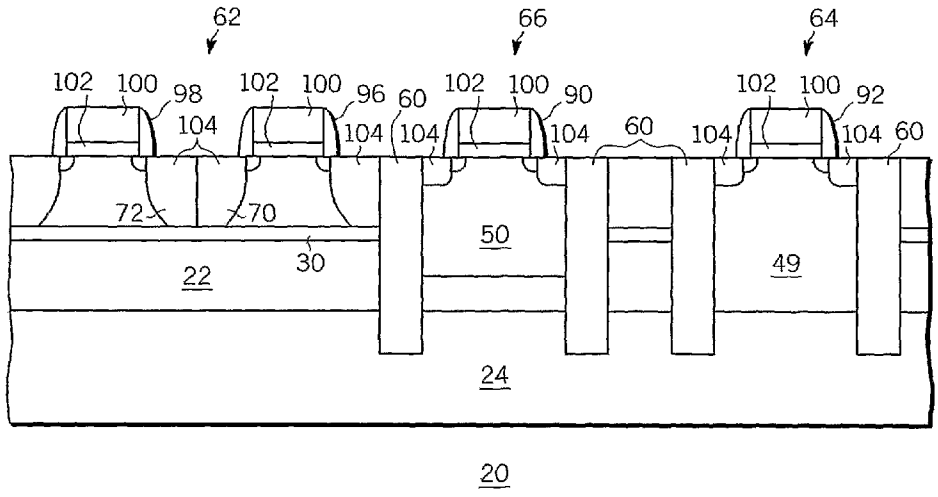
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search 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.

(54) **Title:** INTEGRATED CIRCUIT AND METHOD FOR ITS MANUFACTURE



(57) **Abstract:** An integrated circuit and methods for its manufacture are provided. The integrated circuit (20) comprises a bulk silicon substrate (24) having a first region (64, 66) of (100) crystalline orientation and a second region (66, 64) of (110) crystalline orientation. A layer (62) of silicon on insulator overlies a portion of the bulk silicon substrate. At least one field effect transistor (96, 98) is formed in the layer (62) of silicon on insulator, at least one P-channel field effect transistor (90, 92) is formed in the second region (66, 64) of (110) crystalline orientation, and at least one N-channel field effect transistor (90, 92) is formed in the first region (64, 66) of (100) crystalline orientation.

WO 2006/096380 A1