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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 November 2005 (17.11.2005)

PCT

(10) International Publication Number
WO 2005/109491 A1

(51) International Patent Classification[7]: H01L 21/768, 27/105

(21) International Application Number:
PCT/US2005/014951

(22) International Filing Date: 28 April 2005 (28.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/841,708 6 May 2004 (06.05.2004) US

(71) Applicant: MICRON TECHNOLOGY, INC. [US/US]; 8000 South Federal Way, Boise, ID 83716 (US).

(72) Inventors: TRAN, Luan, C.; 1125 W. Sandy Ct., Meridian, ID 83642 (US). FISHBURN, Fred, D.; 1608 N. 8th Street, Boise, ID 83702 (US).

(74) Agents: LATWESEN, David, G. et al.; Wells St. John P.S., 601 W. 1st Ave., Spokane, WA 99201 (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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, 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.

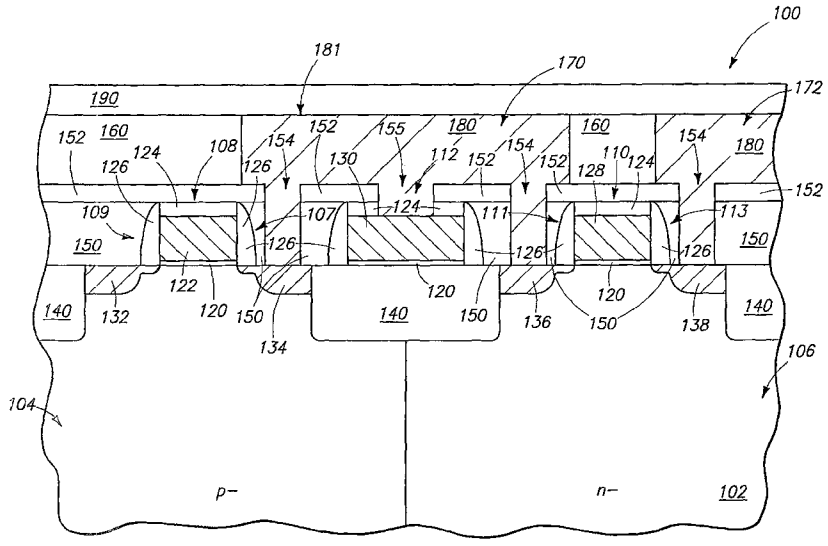
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, 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*
— *with amended claims*

Date of publication of the amended claims: 5 January 2006

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: METHODS OF FORMING ELECTRICAL CONNECTIONS FOR SEMICONDUCTOR CONSTRUCTIONS



(57) Abstract: The invention includes methods for forming electrical connections associated with semiconductor constructions. A semiconductor substrate is provided which has a conductive line thereover, and which has at least two diffusion regions adjacent the conductive line. A patterned etch stop is formed over the diffusion regions. The patterned etch stop has a pair of openings extending through it, with the openings being along a row substantially parallel to an axis of the line. An insulative material is formed over the etch stop. The insulative material is exposed to an etch to form a trench within the insulative material, and to extend the openings from the etch stop to the diffusion regions. At least a portion of the trench is directly over the openings and extends along the axis of the line. An electrically conductive material is formed within the openings and within the trench.

WO 2005/109491 A1