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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 September 2005 (09.09.2005)

PCT

(10) International Publication Number
WO 2005/083778 A1

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

(21) International Application Number:
PCT/US2005/006116

(22) International Filing Date: 18 February 2005 (18.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/784,074 20 February 2004 (20.02.2004) US

(71) Applicant *(for all designated States except US)*: **MICRON TECHNOLOGY, INC.?** [US/US]; 8000 South Federal Way, Boise, ID 83716 (US).

(72) Inventors: **KIRBY, Kyle, K.**; 10681 North Sagecrest Place, Boise, ID 83703 (US). **MENG, Shuang**; 1001 27th Street, Boise, ID 83702 (US). **DERDERIAN, Garo, J.**; 6184 S. Schooner Pl., Boise, ID 83716 (US).

(74) Agents: **LATWESEN, David, G.** et al.; Wells St. John P.S., Suite 1300, 601 W. First Ave., Spokane, WA 92201 (US).

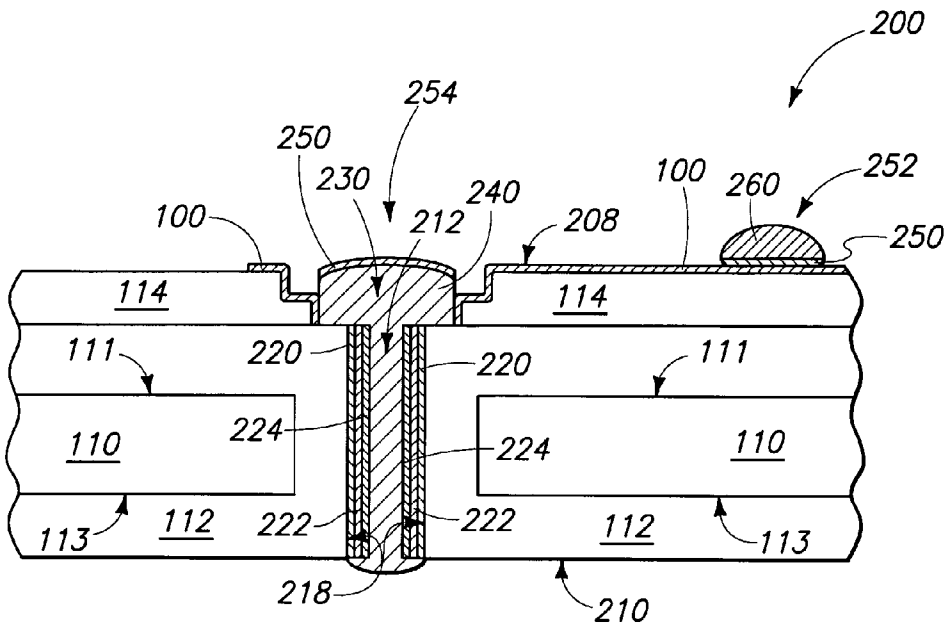
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, 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*

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 FABRICATING INTERCONNECTS FOR SEMICONDUCTOR COMPONENTS



(57) Abstract: In one aspect, the invention encompasses a method of fabricating an interconnect for a semiconductor component. A semiconductor substrate is provided, and an opening (212) is formed which extends entirely through the substrate. A first material (220) is deposited along sidewalls (218) of the opening at a temperature of less than or equal to about 200°C. The deposition can comprise one or both of atomic layer deposition and chemical vapor deposition, and the first material can comprise a metal nitride. A solder-wetting material (224) is formed over a surface of the first material. The solder-wetting material can comprise, for example, nickel. Subsequently, solder (240) is provided within the opening and over the solderwetting material.

WO 2005/083778 A1