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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 May 2011 (12.05.2011)

PCT

(10) International Publication Number
WO 2011/056306 A2

(51) International Patent Classification:
*H01L 23/12* (2006.01) *H01L 23/485* (2006.01)
*H01L 23/48* (2006.01)

(21) International Application Number:
PCT/US2010/049457

(22) International Filing Date:
20 September 2010 (20.09.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/590,138 3 November 2009 (03.11.2009) US

(71) Applicant *(for all designated States except US)*: **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, California 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GUZEK, John S.** [US/US]; 805 W. Beechnut Dr., Chandler, Arizona 85248 (US). **SURVAKUMAR, Mahadevan** [US/US]; 4032 E. Red Oak Ln., Gilbert, Arizona 85297 (US). **AZIMI, Hamid R.** [US/US]; 2621 E. Birchwood Place, Chandler, Arizona 85249 (US).

(74) Agents: **VINCENT, Lester J.** et al.; Blakely Sokoloff Taylor & Zafman, 1279 Oakmead Parkway, Sunnyvale, California 94085 (US).

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

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published**:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) **Title**: MICROELECTRONIC PACKAGE AND METHOD OF MANUFACTURING SAME

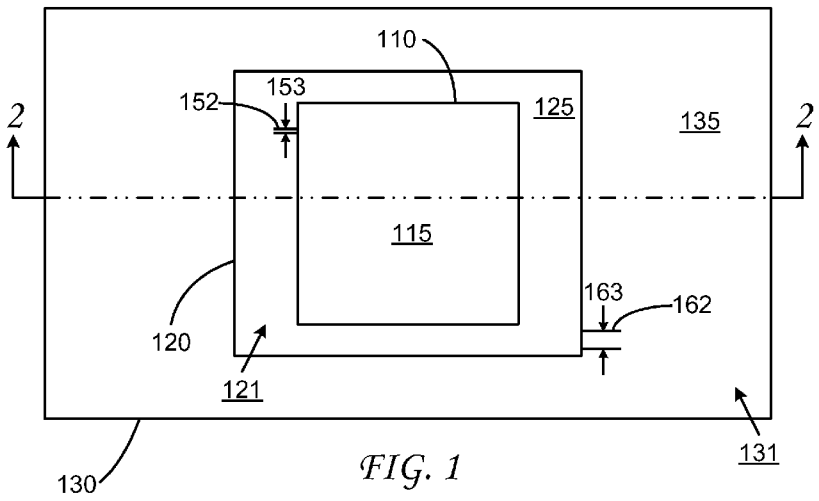



FIG. 1

(57) **Abstract**: A microelectronic package includes a first substrate (120) having a first surface area (125) and a second substrate (130) having a second surface area (135). The first substrate includes a first set of interconnects (126) having a first pitch (127) at a first surface (121) and a second set of interconnects (128) having a second pitch (129) at a second surface (222). The second substrate is coupled to the first substrate using the second set of interconnects and includes a third set of interconnects (236) having a third pitch (237) and internal electrically conductive layers (233, 234) connected to each other with a microvia (240). The first pitch is smaller than the second pitch, the second pitch is smaller than the third pitch, and the first surface area is smaller than the second surface area.

WO 2011/056306 A2