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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number
WO 2005/034203 A2

(51) International Patent Classification[7]: H01L

(21) International Application Number:
PCT/US2004/032451

(22) International Filing Date:
29 September 2004 (29.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/676,883 30 September 2003 (30.09.2003) US

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

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **RUMER, Christopher**; 1560 West Azalea Drive, Chandler, AZ 85248 (US). **SINGH, Kuljeet**; 731 Stewart Street, Folsom, CA 95630 (US).

(74) Agent: **VINCENT, Lester, J.**; Blakely, Sokoloff, Taylor & Zafman, 12400 Wilshire Boulevard, 7th Floor, Los Angeles, CA 90025 (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, 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, IT, 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:
— *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.

WO 2005/034203 A2

(54) Title: METHOD AND APPARATUS FOR A DUAL SUBSTRATE PACKAGE

(57) Abstract: A semiconductor die having a through via formed therein is disclosed. A first conductive layer is formed on the front side of the die and a second conductive layer is formed on the backside of the die, and coupled with the through via. A first package substrate is electrically coupled with the first conductive layer, and a second package substrate is electrically coupled with the second conductive layer. In another embodiment, a substrate ball electrically couples the first and second package substrates. In a further embodiment, a flip chip bump is attached to the first package substrate.