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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 December 2012 (13.12.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/170339 A2

(51) International Patent Classification:
H01L 23/52 (2006.01) *H01L 21/60* (2006.01)

(21) International Application Number:
PCT/US2012/040708

(22) International Filing Date:
4 June 2012 (04.06.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/153,636 6 June 2011 (06.06.2011) 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)*: **ABU BAKAR, Shahrazie, Zainal** [MY/MY]; 54-6-2 Mutiara Indah, Cangkat Bukit Gambir 1, Gelugor, 07, 11700 (MY). **MUSTAFFA, Fairul, Haznizam** [MY/MY]; No2 Persiaran Seksyen 5/6, Bandar Putra Bertam, Kepala Batas, 07, 13200 (MY). **MOHAMED EUSOFF, Azman** [MY/MY]; P-07-08 Desa Permai Indah, Jalan Helang, Gelugor, 07, 11700 (MY). **MOHAMMAD, Azam** [MY/MY]; 68, Jalan Sungai Nibong, Bayan Baru, 07, 11950 (MY).

(74) Agents: **WINKLE, Robert, G.** et al.; Winkle, PLLC, c/o Cpa Global, P.O. Box 52050, Minneapolis, MN 55402 (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, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, RS, 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**: SIGNAL ROUTING USING THROUGH-SUBSTRATE VIAS

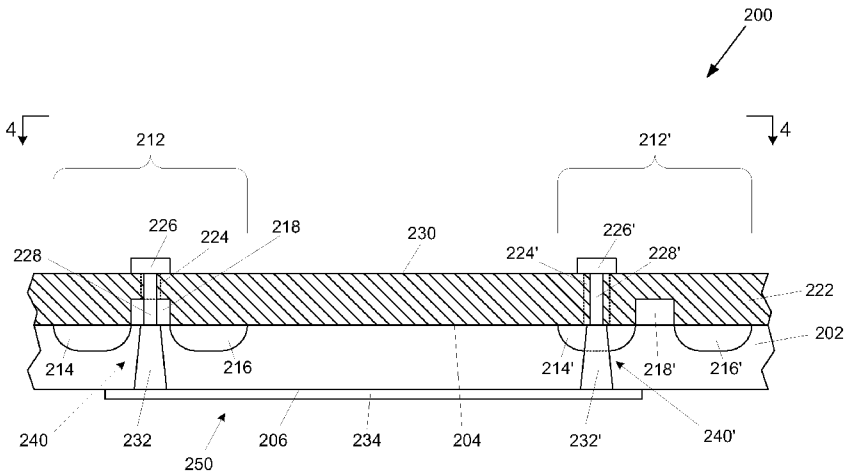


FIG. 3

(57) **Abstract**: The present description relates to the field of microelectronic devices and the fabrication thereof, wherein through-substrate vias are utilized to route signals between microelectronic integrated circuit components, such as transistors, resistors, capacitors, inductors, and the like, within the microelectronic devices. The through-substrate vias may be used for routing critical signals, which may include, but are not limited to, timing sensitive signal, such as clock signals and the like.

WO 2012/170339 A2