



(43) International Publication Date
15 April 2004 (15.04.2004)

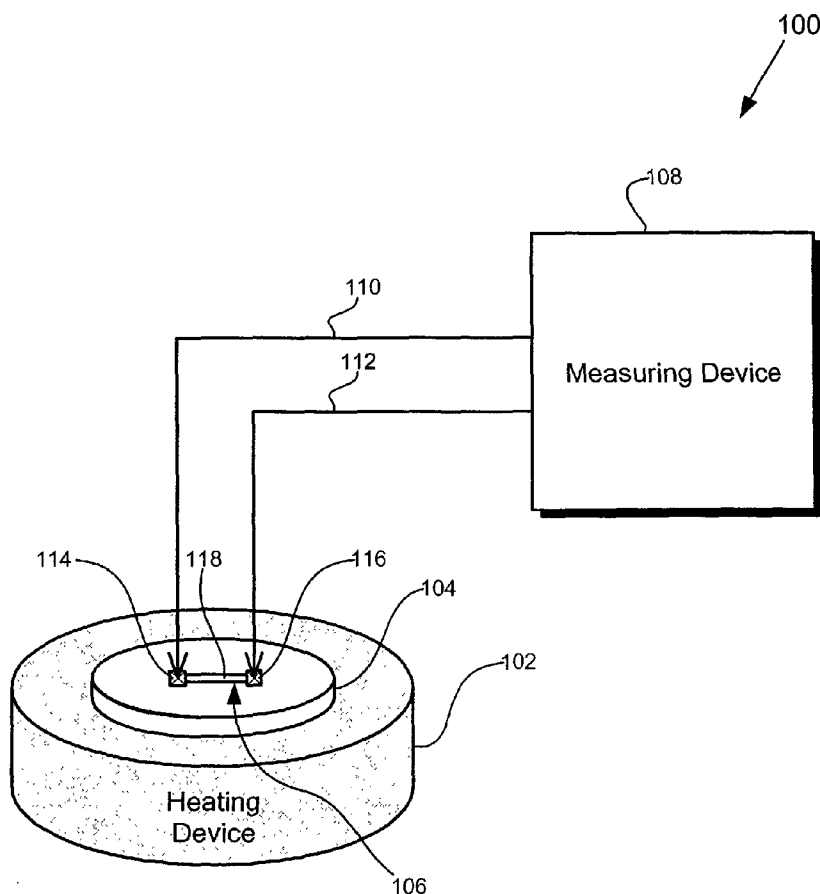
PCT

(10) International Publication Number
WO 2004/031792 A1

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| (51) International Patent Classification ⁷ : | G01R 31/316 | 1307 Edsel Drive, Milpitas, CA 95035 (US). PHAM, Van-Hung ; 1493 Saratoga Drive, Milpitas, CA 95035 (US). |
| (21) International Application Number: | PCT/US2003/028451 | (74) Agent: COLLOPY, Daniel, R. ; Advanced Micro Devices, Inc., One AMD Place, Mail Stop 68, Sunnyvale, CA 94088-3453 (US). |
| (22) International Filing Date: | 10 September 2003 (10.09.2003) | (81) Designated States (<i>national</i>): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW. |
| (25) Filing Language: | English | (84) Designated States (<i>regional</i>): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, |
| (26) Publication Language: | English | |
| (30) Priority Data: | 10/261,358 30 September 2002 (30.09.2002) US | |
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[Continued on next page]

- (54) Title:** METHOD AND SYSTEM FOR ESTABLISHING A RELATION BETWEEN JOULE HEATING AND A CURRENT DENSITY IN A CONDUCTOR



(57) Abstract: According to one exemplary embodiment, a method for establishing a relationship between Joule heating in a conductor and a current density in the conductor is implemented by performing wafer level measurements (500). According to this exemplary embodiment, wafer level measurements are performed to arrive at a temperature coefficient of resistance in the conductor (118, 502). The method also includes determining a thermal resistance of the conductor (510). The thermal resistance is then utilized to establish a relationship between Joule heating in the conductor and the current density in the conductor (512). The relationship so obtained is then utilized to determine design rules, mean time to fail, and other information to aid in the design of reliable semiconductor devices (514). According to another exemplary embodiment, a wafer level measurement system (100) is utilized to establish a relationship between Joule heating in a conductor and a current density in the conductor.



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

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