

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
25 April 2024 (25.04.2024)



(10) International Publication Number
WO 2024/086850 A1

(51) International Patent Classification:

H01L 23/31 (2006.01) H01L 23/433 (2006.01)
H01L 23/373 (2006.01) H01L 23/473 (2006.01)

(21) International Application Number:

PCT/US2023/077543

(22) International Filing Date:

23 October 2023 (23.10.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/380,460 21 October 2022 (21.10.2022) US
18/491,369 20 October 2023 (20.10.2023) US

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(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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,

(54) Title: MOLDED POWER MODULES WITH FLUIDIC-CHANNEL COOLED SUBSTRATES

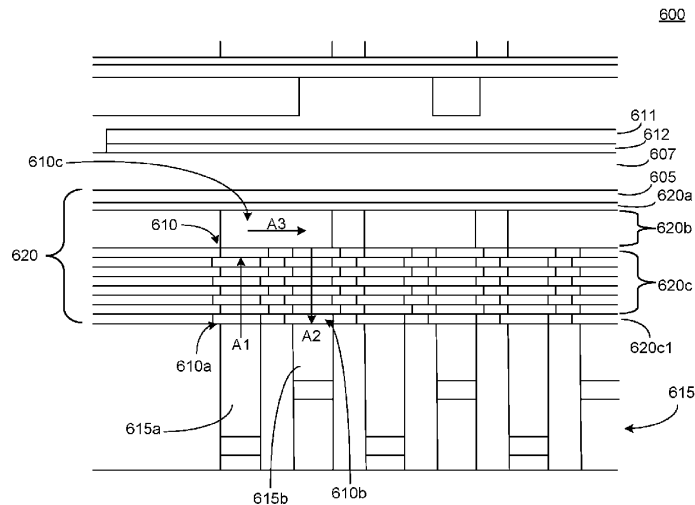


FIG. 6

(57) Abstract: In a general aspect, a semiconductor device module (1000) includes a ceramic substrate (1005) having a first surface and a second surface opposite the first surface. A patterned metal layer (410) is disposed on the first surface of the ceramic substrate, and a semiconductor die (1011) is disposed on the patterned metal layer. A cooling structure (1020) is disposed on the second surface of the ceramic substrate, where the cooling structure includes a plurality of fluidic-cooling channels (310). The module also includes a molding compound (1060) that encapsulates the ceramic substrate, the patterned metal layer and the semiconductor die, and partially encapsulates the cooling structure, such that a fluidic interface surface of the cooling structure is exposed through the molding compound.

[Continued on next page]

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NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*