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H01L 23/00 (2006.01) *H01L 21/52* (2006.01)

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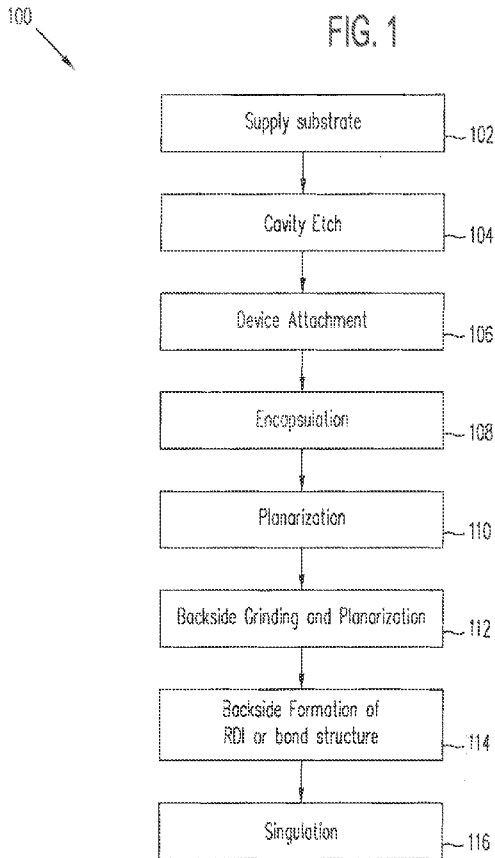
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[Continued on next page]

(54) Title: STRUCTURES AND METHODS FOR RELIABLE PACKAGES



(57) Abstract: A device and method of forming the device that includes cavities formed in a substrate of a substrate device, the substrate device also including conductive vias formed in the substrate. Chip devices, wafers, and other substrate devices can be mounted to the substrate device. Encapsulation layers and materials may be formed over the substrate device in order to fill the cavities.



PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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.

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H01L 21/78; H01L 21/56; H01L 23/00; H01L 21/50; H01L 23/48; H01L 25/065; H01L 23/552; H01L 21/44; H01L 21/48; H01L 21/52

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: substrate, via, encapsulation, chip, singulating

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004-0113283 A1 (WARREN M. FARNWORTH et al.) 17 June 2004 See paragraphs [0120]-[0203] and figures 1A-9G.	1-20
Y	US 2015-0303170 A1 (AMKOR TECHNOLOGY, INC.) 22 October 2015 See paragraphs [0031]-[0035] and figure 1C.	1-6, 12-16
Y	US 2013-0078767 A1 (MYUNG JIN YIM) 28 March 2013 See paragraph [0014] and figures 1-3.	7-11, 17-20
A	US 2009-0072357 A1 (JINBANG TANG et al.) 19 March 2009 See paragraphs [0025]-[0033] and figures 1-7.	1-20
A	US 2014-0353815 A1 (MICRON TECHNOLOGY, INC.) 04 December 2014 See paragraphs [0021]-[0039] and figures 1A-1K.	1-20

Further documents are listed in the continuation of Box C.

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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