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(54) Title: LOW-PROFILE MICROELECTRONIC PACKAGE, METHOD OF MANUFACTURING SAME, AND ELECTRONIC ASSEMBLY CONTAINING SAME

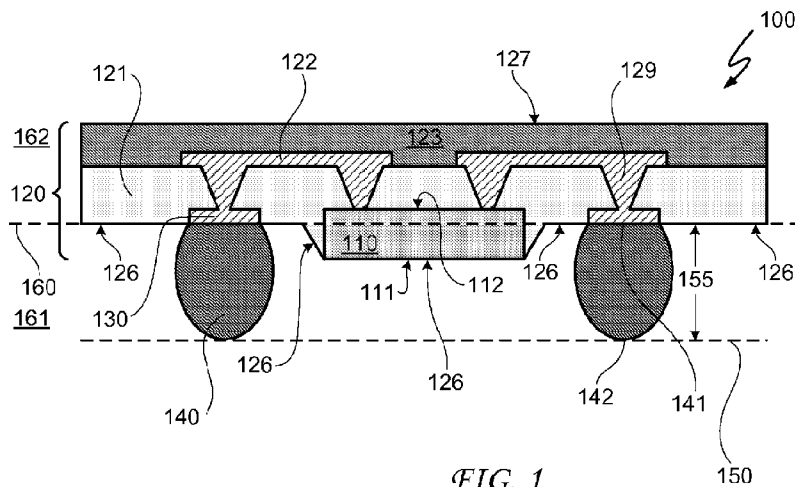


FIG. 1

(57) Abstract: A low-profile microelectronic package includes a die (110) (having a first surface (111) and a second surface (122)) and a package substrate (120). The substrate includes an electrically insulating layer (121) that forms a first side (126) of the substrate, an electrically conductive layer (122) connected to the die, and a protective layer (123) over the conductive layer that forms a second side (127) of the substrate. The first surface of the die is located at the first side of the substrate. The insulating layer has a plurality of pads (130) formed therein. The package further includes an array of interconnect structures (140) located at the first side of the substrate. Each interconnect structure in the array of interconnect structures has a first end (141) and a second end (142), and the first end is connected to one of the pads.



## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2011/061338****A. CLASSIFICATION OF SUBJECT MATTER****H01L 23/48(2006.01)i, H01L 23/28(2006.01)i**

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 23/48; H01L 21/60; H01R 12/02; H01L 21/44; H01L 21/48; H01L 23/488

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) &amp; Keywords:low-profile package, bumpless build-up layer(BBUL)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 2009-0246909 A1 (TAKEUCHI; YUKIHARU et al.) 01 October 2009 See paragraphs [0029]-[0052],[0055]; and figures 1,2A-3E,4,5B,5C,10,11.	1-9, 12, 13, 16-20 14, 15 10, 11
Y A	US 2003-0134497 A1 (SAIJO; KINJI et al.) 17 July 2003 See paragraphs [0081]-[0095]; and figures 4-6.	14, 15 1-13, 16-20
A	US 2007-0289127 A1 (HURWITZ; DROR et al.) 20 December 2007 See abstract; and figures 1-2.	1-20
A	US 2009-0051024 A1 (CHIA; KAN-JUNG) 26 February 2009 See abstract; and figures 2A-2E.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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**PCT/US2011/061338**

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