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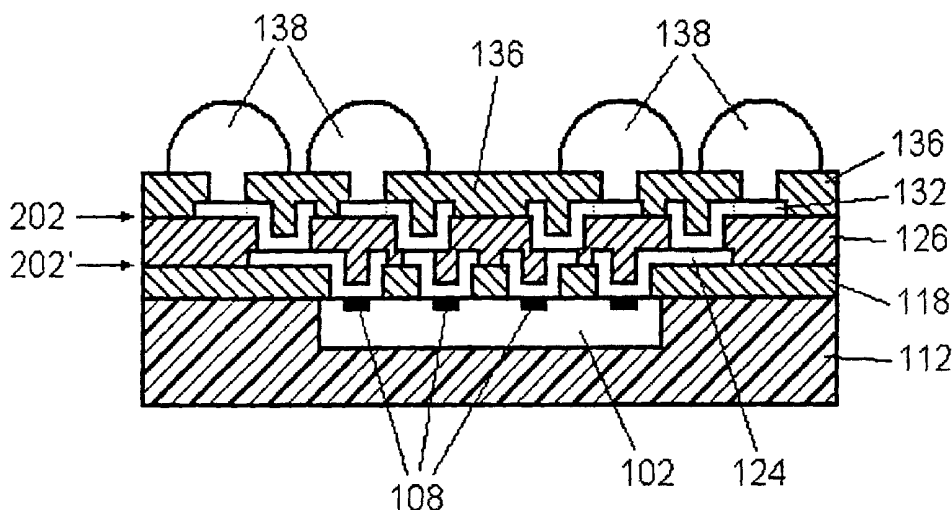
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(54) Title: DIRECT BUILD-UP LAYER ON AN ENCAPSULATED DIE PACKAGE HAVING A MOISTURE BARRIER STRUCTURE



(57) Abstract: A packaging technology that fabricates a microelectronic package including build-up layers (118, 124, 136) having conductive traces (124) on an encapsulated microelectronic die (102) and on other packaging material that surrounds the microelectronic die (112), wherein a moisture barrier structure is simultaneously formed with the conductive traces. An exemplary microelectronic package includes a microelectronic die having an active surface and at least one side. Packaging material(s) (112) is disposed adjacent the microelectronic die side (2), wherein the packaging material (112) includes at least one surface substantially planar to the microelectronic die active surface. A first dielectric material layer (118) may be disposed on at least a portion of the microelectronic die active surface and the encapsulation material surface. At least one conductive (124) trace is then formed on the first dielectric material layer to electrically contact the microelectronic die active surface. A barrier structure proximate an edge of the microelectronic package is formed simultaneously out of the same material as the conductive traces (124).

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L23/00 H01L23/498 H01L23/538 H01L23/31

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)

IPC 7 H01L

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 291 066 A (NEUGEBAUER CONSTANTINE A ET AL) 1 March 1994 (1994-03-01)	1-5, 7-11, 13-18, 20-22, 25
A	column 3, line 16 - line 68	6, 12, 24, 26-28
P, X	US 6 154 366 A (LI JIAN ET AL) 28 November 2000 (2000-11-28)	1, 2, 4, 5, 7, 8, 10, 13, 14, 16-18, 20, 21, 25
	the whole document	
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 856 705 A (TING CHIU H) 5 January 1999 (1999-01-05)</p> <p>column 11, line 28 - line 39; figure 13 -----</p>	<p>1-3, 7-9, 13-16, 20-22, 24, 25, 28</p>
A	<p>EP 0 938 138 A (GEN ELECTRIC) 25 August 1999 (1999-08-25)</p> <p>column 5, line 28 - line 31 -----</p>	<p>4-6, 10-12, 17-19</p>
A	<p>US 5 111 278 A (EICHELBERGER CHARLES W) 5 May 1992 (1992-05-05)</p> <p>column 10, line 3 - line 44 -----</p>	<p>4-6, 10-12, 17-19, 23, 27</p>
A	<p>US 5 745 984 A (COLE JR HERBERT STANLEY ET AL) 5 May 1998 (1998-05-05) claim 1; figure 10 -----</p>	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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