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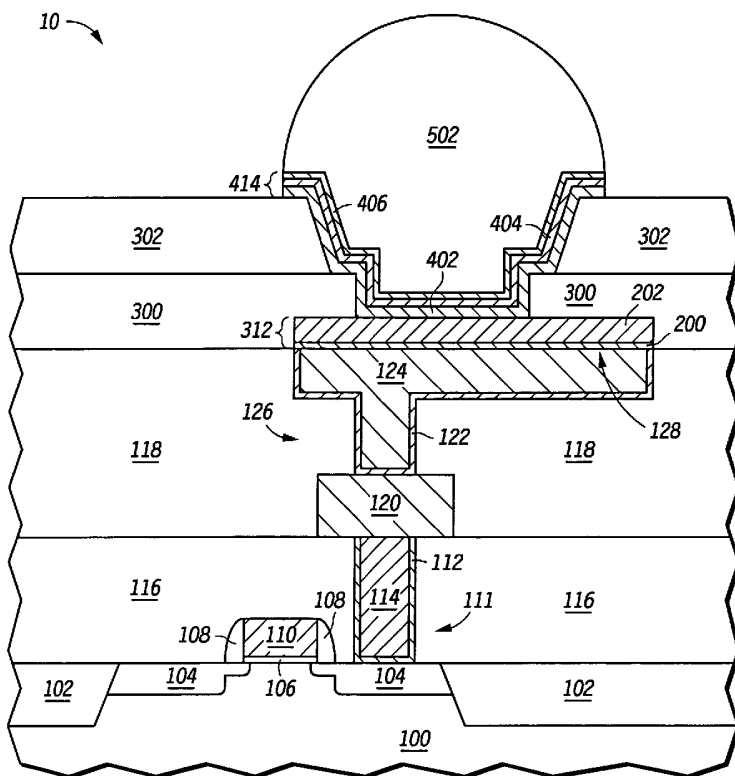
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(54) Title: SEMICONDUCTIVE DEVICE AND METHOD OF FORMATION



(57) Abstract: In accordance with one embodiment of the present invention, a semiconductor device underbump metallurgy (414) is formed over a semiconductor bond pad (128), wherein the underbump metallurgy (414) comprises a chromium, copper, and nickel phased-region (404), and wherein the presence of nickel in the phased-region (404) inhibits conversion of tin from the solder bump and other tin sources from forming spallable Cu₆Sn₅ copper-tin intermetallics.



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B. FIELDS SEARCHED		
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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, PAJ, WPI Data, IBM-TDB		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 111 321 A (AGARWALA BIRENDRA NATH) 29 August 2000 (2000-08-29)	1,5
A	column 3, line 51 -column 4, line 2; figures 2,6	2,6
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A	-& JP 06 188284 A (HITACHI LTD), 8 July 1994 (1994-07-08) abstract	2,7
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
° Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed		*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *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 *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Zeisler, P

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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>SULLIVAN M J: "THE EFFECTS OF INTERFACES ON C-4 SOLDER BUMP RELIABILITY" , MATERIALS RESEARCH SOCIETY SYMPOSIUM PROCEEDINGS, MATERIALS RESEARCH SOCIETY, PITTSBURG, PA, US, VOL. 515, PAGE(S) 55-66 XP008013297 ISSN: 0272-9172 the whole document</p>	1
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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