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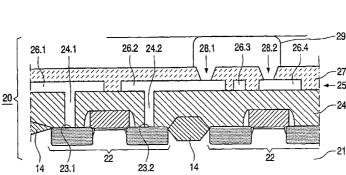
(71) Applicant: KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

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(72) Inventors: REINER, Joachim, C.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). RZITTKA, Eckart; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). SOLO DE For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: INTEGRATED CIRCUIT DEVICE WITH BUMP BRIDGES AND METHOD FOR MAKING THE SAME

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(57) Abstract: Text Integrated circuit device (20) comprising a silicon substrate (21), integrated devices (22) with contacts (23.1, 23.2), an isolating layer (24) at least partially covering the integrated devices (22) and comprising conducting areas (24.1, 24.2) which establish a conductive path to the contacts (23.1, 23.2) of the integrated devices (22). A metallization level (25) with metal lines (26.1, 26.2, 26.3, 26.4) is provided which connect to one of the contacts (23.2). The metal lines (26.1, 26.2, 26.3, 26.4) are situated above the isolating layer (24). A passivation layer (27) - situated above the metallization level (25) - comprises at least two contact areas (28.1, 28.2) for partially exposing at least two of the metal lines (26.2, 26.4). A bump bridge (29) comprising a conductive, low-resistance material, is situated on the passivation layer (27). The bump bridge (29) has a high aspect ratio and provides for a conductive connection between at least two of the metal lines (26.2, 26.4). It crosses another metal line (26.3) that is situated within the metallization level (25), without making contact to this metal line (26.3), and a substantial part of the bump bridge (29) is supported by the passivation layer (27).



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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H01L23/485 H01L H01L23/60 H01L23/522 H01L21/60 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, WPI Data, PAJ, INSPEC C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category ° US 5 182 629 A (NOWAK MATTHEW M ET AL) 1-5.8-19χ 26 January 1993 (1993-01-26) column 2, line 40 -column 3, line 16 column 6, line 4 -column 9, line 10 claims 1-15 figures 1,3-6 1 - 19US 5 903 058 A (AKRAM SALMAN) Υ 11 May 1999 (1999-05-11) column 2, line 23 - line 62 column 5, line 44 -column 7, line 8 column 8, line 32 - line 65 claims 1,2,6,7,11,12,14,17,19,23-25 claims 29,32-34,38,39 figures 1E,1H,2A-2E,3A-4E,8A-8J -/--Patent family members are listed in annex. Further documents are listed in the continuation of box C. χ ° Special categories of cited documents: "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 "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to 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) 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 docu-O document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled other means in the art. "P" document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 16/07/2003 8 July 2003 Authorized officer 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 Weis, T

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