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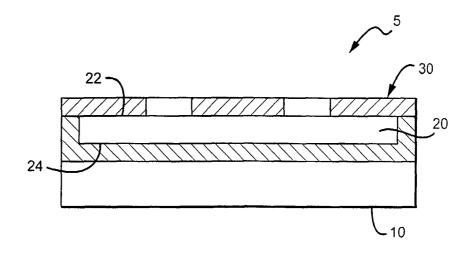
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(54) Title: LAYERED CIRCUIT BOARDS AND METHODS OF PRODUCTION THEREOF



(57) Abstract: Compositions and methods are provided whereby printed wiring boards (5) may be produced that comprise a) a substrate layer (10), and b) a hollow (20), mirror-clad optical wave-guide laminated onto the substrate layer (10). The printed wiring board (5) further comprises a cover material (30) coupled to the wave-guide (20).





#### INTERNATIONAL SEARCH REPORT

Inter al Application No PCT/US 01/49088

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G02B6/12 G02B G02B6/43 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 GO2B H05K H04B 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 C. DOCUMENTS CONSIDERED TO BE RELEVANT Category ° Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X US 5 525 190 A (HENKES JOHN L ET AL) 1-7,9, 11 June 1996 (1996-06-11) 10,12-19 column 4, line 3 -column 7, line 21 column 11, line 25 -column 13, line 28; figures 1-3,18-21 X PATENT ABSTRACTS OF JAPAN 1-10.vol. 1997, no. 11 12 - 1928 November 1997 (1997-11-28) -& JP 09 184937 A (SHARP CORP; IZUTSU MASAYUKI), 15 July 1997 (1997-07-15) abstract; figures 1A-C paragraphs '0068!-'0085! Χ Further documents are listed in the continuation of box C. Patent family members are listed in annex. ° 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 filing date cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another "Y" document of particular relevance: the claimed invention citation or other special reason (as specified) 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 in the art. other means document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 22 May 2003 02/06/2003 Name and mailing address of the ISA Authorized officer 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 Wolf, S

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