A PROCESS FOR UNDERFILLING FLIP-CHIP INTEGRATED CIRCUIT PACKAGE WITH AN UNDERFILL MATERIAL THAT IS HEATED TO A PARTIAL GEL STATE
Published:
— With international search report.

(88) Date of publication of the international search report: 8 March 2001

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.
A. CLASSIFICATION OF SUBJECT MATTER

| IPC | H01L21/56 |

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

| IPC | H01L |

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
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<tbody>
<tr>
<td>X</td>
<td>EP 0 778 616 A (LUCENT TECHNOLOGIES INC) 11 June 1997 (1997-06-11) page 2, column 2, line 58 -page 3, column 3, line 15; figure 1 page 5, column 7, line 33 - line 42; figures 1,2</td>
<td>1, 2, 4, 7, 8</td>
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<tr>
<td>A</td>
<td>EP 0 340 492 A (IBM) 8 November 1989 (1989-11-08) the whole document</td>
<td>1, 4, 7, 8</td>
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

Date of the actual completion of the international search

8 June 2000

Date of mailing of the international search report

20.10.00

Name and mailing address of the ISA

European Patent Office, P.B. 5816 Patentdreef 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3018

Authorized officer

ZEISLER, P
INTERNATIONAL SEARCH REPORT

Box I  Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. □ Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II  Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. □ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. □ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-4, 7, 8

Remark on Protest

□ The additional search fees were accompanied by the applicant’s protest.

□ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (1)) (July 1998)
1. Claims: 1-4, 7, 8

Process for underfilling an integrated circuit onto a substrate by dispensing a first underfill material and heating the first underfill material to a partial gel state.

2. Claims: 5, 6, 9-15

Process for mounting and underfilling an integrated circuit onto a substrate comprising the step of baking the substrate.
<table>
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<tr>
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<tr>
<td></td>
<td></td>
<td>JP 9232348 A</td>
<td>05-09-1997</td>
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