Semiconductor device with leadframe finger lock

In a method and system for fabricating a semiconductor device (200), a portion of a metal sheet to form a leadframe (210) having a lead finger (220) is removed to form a lead finger lock (260). The lead finger lock is disposed within a configurable distance of a wirebonding joint (240) located on a surface of the lead finger. An integrated circuit (integrated circuit) chip (290) is attached to the leadframe. A conductive pad end (232) of a bond wire (230) is bonded to the integrated circuit chip and a lead finger end (234) of the bond wire is bonded to an inner end (222) of the lead finger at the wirebonding joint. The integrated circuit chip, the leadframe, the lead finger, and the wirebonding are encapsulated with a molding compound (molding compound) (250). The lead finger lock that is encapsulated by the molding compound limits a relative displacement between the molding compound and the lead finger at the wirebonding joint.
Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
Y July 2008
INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/085507

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H01 L 23/495 (2008.04)
USPC - 257/666
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(8) - H01 L23/495 (2008 04)
USPC - 257/666

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 practicable, search terms used)
PatBase and Google Patent

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>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2004/0124505 A1 (MAHLE et al) 01 July 2004 (01 07.2004) entire document</td>
<td>1,2,4-9</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>3,10-12</td>
</tr>
<tr>
<td>Y</td>
<td>US 4,924,477 A (GILMORE et al) 08 May 1990 (08 05 1990) entire document</td>
<td>3</td>
</tr>
<tr>
<td>Y</td>
<td>US 5,345,106 A (DOERING et al) 06 September 1994 (06 09 1994) entire document</td>
<td>10-12</td>
</tr>
</tbody>
</table>

D. Further documents are listed in the continuation of Box C.

"X" 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 application or patent 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

Date of the actual completion of the international search
21 April 2008

Date of mailing of the international search report
13 MAY 2008

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No 571-273-3201

Form PCT/ISA/210 (second sheet) (April 2005)

Authorized officer:
Blame R Copenheaver
PCT Helpdesk 571-272-4300
PCT OSP 571-272-7774