(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 001 271 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
03.11.2010 Bulletin 2010/44

(43) Date of publication A2:
10.12.2008 Bulletin 2008/50

(21) Application number: **08251545.3**

(22) Date of filing: **28.04.2008**

(51) Int Cl.:
H05K 1/00 $^{(2006.01)}$
H05K 3/44 $^{(2006.01)}$
H05K 3/40 $^{(2006.01)}$
H05K 3/46 $^{(2006.01)}$
H05K 3/40 $^{(2006.01)}$

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **02.05.2007 US 797232**

(71) Applicant: **Endicott Interconnect Technologies, Inc.**
Endicott,
New York 13760 (US)

(72) Inventors:
- **Davis, Thomas J.**
  Binghamton, New York 13905 (US)
- **Lauffer, John M.**
  Waverly, New York 14892 (US)
- **Desai, Subahu D.**
  Vestal, New York 13850 (US)
- **McNamara, James J. Jnr.**
  Vestal, New York 13850 (US)
- **Markovich, Voya R.**
  Endwell, New York 13760 (US)

(74) Representative: **Lorente Berges, Ana et al**
A2 Estudio Legal
C/Félix Boix 3 - 7. C
28036 Madrid (ES)

(54) Method for making a multilayered circuitized substrate

(57) A method of making a multilayered circuitized substrate (101) in which a continuous process is used to form electrically conductive layers (65) which each will form part of a sub-composite (75, 75', 75"). The sub-composites (75, 75', 75") are then aligned such that openings (57) within the conductive layers (65) are also aligned, the sub-composites (75, 75', 75") are then bonded together, and a plurality of holes (113) are then laser drilled through the entire thickness of the bonded structure. The dielectric layers (67, 69) used in the sub-composites (75, 75', 75") do not include continuous or semi-continuous fibers therein, thus expediting hole formation there-through.

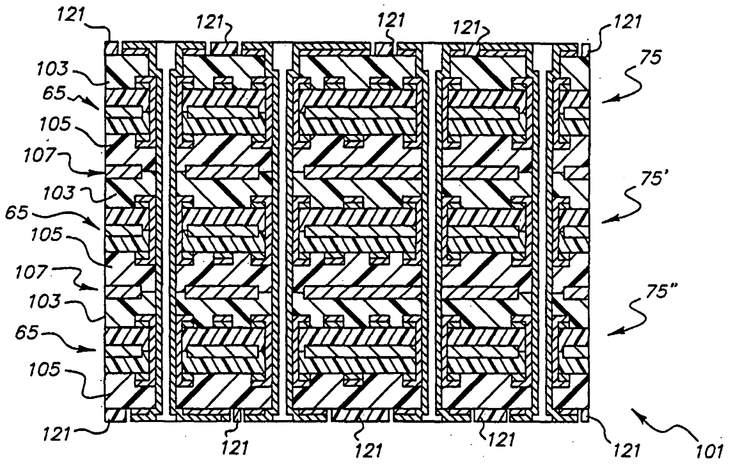

FIG. 11

EP 2 001 271 A3

Printed by Jouve, 75001 PARIS (FR)

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 08 25 1545

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	EP 1 720 390 A2 (ENDICOTT INTERCONNECT TECH INC [US]) 8 November 2006 (2006-11-08) * the whole document * -----	1-13	INV. H05K1/00 H05K3/46 H05K3/44
Y	EP 1 583 405 A2 (ENDICOTT INTERCONNECT TECH INC [US]) 5 October 2005 (2005-10-05) * the whole document * -----	1-13	ADD. H05K3/40
Y	US 6 175 087 B1 (KEESLER ROSS W [US] ET AL) 16 January 2001 (2001-01-16) * abstract; figures 3a-5 * * column 2, line 66 - column 6, line 55 * -----	1-13	
Y	EP 0 462 266 B1 (NICOLITCH SA [FR]) 30 August 1995 (1995-08-30) * the whole document * -----	1-13	
Y	US 5 702 662 A (SMITH ADLAI H [US] ET AL) 30 December 1997 (1997-12-30) * the whole document * -----	1-13	TECHNICAL FIELDS SEARCHED (IPC)
Y	JP 2005 113173 A (TOPPAN PRINTING CO LTD) 28 April 2005 (2005-04-28) * abstract * * the whole document * -----	1-13	H05K
Y	US 2005/244621 A1 (ARAI KUNIO [JP] ET AL) 3 November 2005 (2005-11-03) * the whole document * -----	1-13	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 September 2010	Kelly, Derek

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons
....
& : member of the same patent family, corresponding document

5

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 25 1545

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-09-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1720390 A2	08-11-2006	CN 1856221 A	01-11-2006
		JP 2006303489 A	02-11-2006
		US 2006240641 A1	26-10-2006
		US 2007266555 A1	22-11-2007
EP 1583405 A2	05-10-2005	JP 2005294833 A	20-10-2005
		US 2005218524 A1	06-10-2005
		US 2006131755 A1	22-06-2006
		US 2006125103 A1	15-06-2006
		US 2006180936 A1	17-08-2006
		US 2005224985 A1	13-10-2005
		US 2005224251 A1	13-10-2005
US 6175087 B1	16-01-2001	CN 1261765 A	02-08-2000
		HK 1027468 A1	08-04-2005
		KR 20000047807 A	25-07-2000
		TW 513901 B	11-12-2002
		US 2001023044 A1	20-09-2001
EP 0462266 B1	30-08-1995	AT 127314 T	15-09-1995
		CA 2055452 A1	12-07-1991
		DE 69112501 D1	05-10-1995
		DE 69112501 T2	04-04-1996
		EP 0462266 A1	27-12-1991
		FR 2657219 A1	19-07-1991
		WO 9111090 A1	25-07-1991
		JP 4504932 T	27-08-1992
		US 5278385 A	11-01-1994
US 5702662 A	30-12-1997	NONE	
JP 2005113173 A	28-04-2005	NONE	
US 2005244621 A1	03-11-2005	CN 1694606 A	09-11-2005
		KR 20060047637 A	18-05-2006
		US 2008230512 A1	25-09-2008

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82