

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2017/026056

A. CLASSIFICATION OF SUBJECT MATTER

H05K3/24(2006.01)i, H01L23/12(2006.01)i, H05K1/09(2006.01)i

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)

H05K3/24, H01L23/12, H05K1/09, H01L21/52

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

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2017
Kokai Jitsuyo Shinan Koho	1971-2017	Toroku Jitsuyo Shinan Koho	1994-2017

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	JP 2003-234552 A (Kyocera Corp.), 22 August 2003 (22.08.2003), paragraphs [0017], [0037] to [0054], [0058]; fig. 2 (Family: none)	1, 3, 7, 8, 10, 14 4-6, 11-13 2, 9
Y A	JP 2003-100952 A (Kyocera Corp.), 04 April 2003 (04.04.2003), paragraphs [0014] to [0019], [0031] to [0034]; fig. 2 (Family: none)	4, 11 1-3, 5-10, 12-14
Y A	JP 2006-41225 A (Denso Corp.), 09 February 2006 (09.02.2006), paragraphs [0008], [0010], [0043] to [0048], [0055], [0056], [0078]; fig. 6 (Family: none)	5, 6, 12, 13 1-4, 7-11, 14

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"I" 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 invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"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 documents, such combination being obvious to a person skilled in the art
"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)	"&" document member of the same patent family
"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
15 September 2017 (15.09.17)

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 2008/081758 A1 (Tokuyama Corp.), 10 July 2008 (10.07.2008), paragraphs [0026] to [0040], [0051]; table 1; fig. 1 & US 2010/0015468 A1 paragraphs [0036] to [0054], [0065]; table 1; fig. 1 & EP 2099068 A1	8-10, 14 1-7, 11-13
A	JP 2000-323618 A (Sumitomo Electric Industries, Ltd.), 24 November 2000 (24.11.2000), paragraphs [0030] to [0033], [0042]; fig. 1 (Family: none)	1-14

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Object to be covered by this search:

A. Range to be covered by this search

The search was conducted by limiting the statement "heated to be softened" in claim 1 to a case in which heating is performed to such an extent that the components of the conductor base portion and the components of the conducting layer are mutually thermally diffused.

B. Reason for limitation to an object to be covered by this search

Claim 1 does not comply with the requirement of the clarity prescribed under PCT Article 6 as indicated below.

In the claim, there is the description "the conducting layer is heated to be softened", but there is no statement about the extent of softening, that is, to what extent the conducting layer is softened with respect to what kind of state the conducting layer is taken, so that the extent of the description "to be softened" is unclear.

Therefore, a heating condition range when "heated to be softened" is also unclear.

Consequently, the invention of claim 1 is not clear.