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(71) Applicant: DAITO COMMUNICATION
APPARATUS CO. LTD.
Tokyo (JP)

(72) Inventor: Sugaya, Shoichi,
Daito Comm. Apparatus Co., Ltd.
Tokyo (JP)

(74) Representative: BATCHELLOR, KIRK & CO.
2 Pear Tree Court
Farringdon Road
London EC1R 0DS (GB)

(54) PTC element

(57) A PTC element (1) comprises an essentially plate-shaped PTC substrate (2), composed of a crystalline polymer having conductive particles dispersed therein. The PTC element includes a pair of electrode films (3) provided on the front and back surfaces of the PTC substrate; a pair of insulating layers (7a,7b), each of which covers one of two opposing side faces of the PTC substrate and a portion of one of the electrode films (3); and a pair of film-like electrodes (9) provided on the surfaces of the insulating layers in such a manner as to be in electrical contact with the portions of the electrode films that are not covered by the insulating layers. The

electrodes are in the form of films and disposed at the side faces of the element, so the element may be surface mounted despite its small size. The electrodes extending from the front surface to the back surface of the PTC substrate permit the element to be mounted on the surface of a printed board at the point where the electrodes face the printed board and also at the points where the electrodes extend perpendicularly to the printed board.

Such a PTC element can be convenient to mount with improved reliability in the attachment of electrodes and may be easier to manufacture.

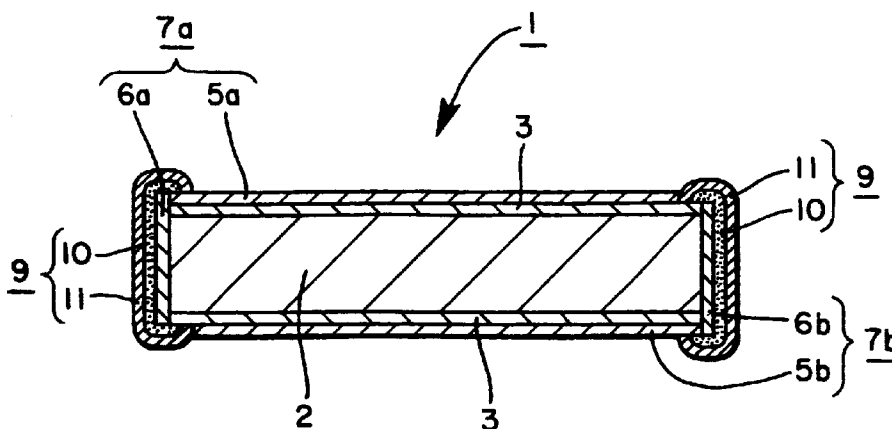


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 97 30 0947

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	WO 95 34084 A (RAYCHEM CORP) 14 December 1995 * the whole document *	1,9,25,29	H01C1/14
A	---	2,10,11,16,18	
Y	EP 0 336 497 A (PHILIPS NV) 11 October 1989 * the whole document *	1,9,25,29	
A	---	3-8,13,15,22,26-28,30	
A	EP 0 229 286 A (SIEMENS AG ; SIEMENS BAUELEMENTE OHG (AT)) 22 July 1987 * column 5, line 20 - column 7, line 7; figures 1-3 *	1,4-7,25	
A	US 4 959 632 A (UCHIDA KATSUYUKI) 25 September 1990 * column 2, line 59 - column 3, line 24; claims 1,6; figures 1-3 *	1,7,16-18,22,25,28,29	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	US 4 787 135 A (NAGAHORI ATSUSHI) 29 November 1988 * column 3, line 41 - column 3, line 47; claim 5; figure 3 *	1,2,6,17-21,23,29	H01C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 May 1998	Examiner Gorun, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p> <p>& : member of the same patent family, corresponding document</p>			

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