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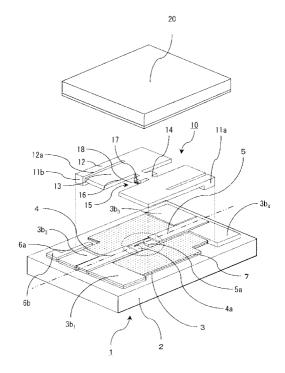
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## (54) Electrostatic mems switch

(57) A plurality of fixed contacts and signal lines are provided on a fixed substrate. A movable contact which is closed or opened with the fixed contacts is provided on a movable substrate opposed to the fixed substrate. A film thickness of the fixed contacts is made to be small-

er than that of the signal lines so that the movable contact is set in a concave portion constituted by the fixed contacts when the fixed contacts, and the movable contact are closed and the signal lines are linearly connected.

Fig. 1





## **EUROPEAN SEARCH REPORT**

Application Number EP 03 10 4514

	DOCUMENTS CONSIDE				
Category	Citation of document with indi of relevant passage		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X Y	WO 00/44012 A (GFD-G DIAMANTPRODUKTE MBH; KOHN, ERH) 27 July 2 * claims 16,17; figu * page 8, last parag paragraph 1 * * page 11, paragraph paragraph 2 *	ADAMSCHIK, MARIO; 000 (2000-07-27) res * raph - page 9,	1-3	H01H59/00	
Υ	PARK J Y ET AL: "Fu micromachined capaci applications" MICROWAVE SYMPOSIUM MTT-S INTERNATIONAL JUNE 2000, PISCATAWA vol. 1, 11 June 2000 283-286, XP010505974 ISBN: 0-7803-5687-X * page 283 - page 28	tive switches for RF DIGEST. 2000 IEEE BOSTON, MA, USA 11-16 Y, NJ, USA,IEEE, US, (2000-06-11), pages	1-8		
Υ	US 2002/163408 A1 (FUJII MITSURU ET AL) 7 November 2002 (2002-11-07) * abstract; figures * * paragraph [0004] - paragraph [0014]		1-8	TECHNICAL FIELDS SEARCHED (Int.CI.7) H01H H01P	
Y	10 October 2002 (200 * page 5, line 30 - * page 7, line 7 - l	page 6, line 6 * ine 18 * 	4,5		
	The present search report has been place of search	Date of completion of the search		Examiner	
	The Hague	6 October 2005	De	smet, W	
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		E : earlier patent o after the filing o D : document cite L : document cite	T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document oited in the application L: document oited for other reasons  &: member of the same patent family, corresponding document		

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 03 10 4514

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.

06-10-2005

Patent document cited in search report		Publication date		Patent family member(s)	Publicat date
WO 0044012	A	27-07-2000	AT AU DE EP JP	239974 T 2440000 A 10080131 D2 1151446 A1 2003527727 T	15-05- 07-08- 25-04- 07-11- 16-09-
US 2002163408	A1	07-11-2002	CN EP WO	1366694 A 1283539 A1 0182323 A1	28-08- 12-02- 01-11-
WO 02079076	Α	10-10-2002	NONE		
e details about this annex					