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(71) Applicant: ACTEL CORPORATION [US/US]; 955 East Arques Avenue, Sunnyvale, CA 94086 (US).

(72) Inventors: HAWLEY, Frank, W.; 1360 Capri Drive, Campbell, CA 95008 (US). ELTOUKHY, Abdelshafy, A.; 509 Churchill Park Drive, San Jose, CA 95136 (US). McCOLLUM, John, L.; 19810 Merribrook Drive, Saratoga, CA 95070 (US).

(74) Agents: D'ALESSANDRO, Kenneth et al.; D'Alessandro & Ritchie, P.O. Box 640640, San Jose, CA 95164-0640 (US).

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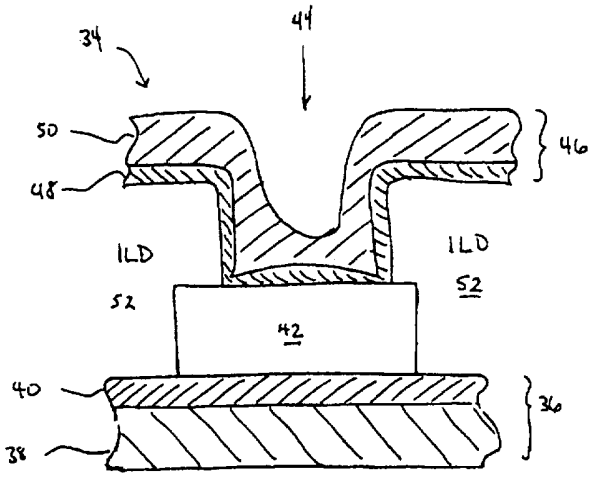

(57) Abstract

A metal-to-metal antifuse disposed between two aluminum metallization layers (38, 50) in a CMOS integrated circuit or similar structure includes an antifuse material layer (42) having an aluminium-free conductive link. The aluminium-free link is formed by forming a first barrier metal layer out of tin having a first thickness (40, 48), a second barrier metal layer out of tin having a second thickness (48, 40) which may be less than said first thickness, the first and second barrier metal layers separating the antifuse material layer from first and second electrodes. The antifuse is programmed by applying a voltage potential capable of programming the antifuse across the electrodes with the more positive side of the potential applied to the electrode adjacent the barrier metal layer having the least thickness. In another aspect of the invention, an antifuse having a first barrier metal layer of a first thickness and a second barrier metal layer of a second thickness may be fabricated wherein the first thickness is less than the second thickness and wherein programming of the antifuse is accomplished by placing the more positive voltage of the programming voltage supply on the electrode of the antifuse adjacent the first barrier metal layer.

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INTERNATIONAL SEARCH REPORT

Inte: ›nal Application No
PCT/US 96/15872

A. CLASSIFICATION OF SUBJECT MATTER
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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 6 H01L

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 practical, 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.
A	WO 93 04499 A (CROSSPOINT SOLUTIONS INC) 4 March 1993 see page 7, line 13 - page 10, line 30; figures 1-4	1,3,5-7, 9,11-18
A	EP 0 661 745 A (ACTEL CORP) 5 July 1995 see column 3, line 48 - column 5, line 24	1,3,5-7, 9,11-18
A	EP 0 660 408 A (UNITED TECHNOLOGIES CORP) 28 June 1995 see column 4, line 47 - column 8, line 52; figures 3-9	1,3,5-7, 9,11-18
A	US 5 403 778 A (KWOK SIANG P ET AL) 4 April 1995 see column 4, line 56 - column 5, line 63; figures 2-5	1,3,5-7, 9,11-18

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl, Fax (+ 31-70) 340-3016	Le Minh, I

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Inter nal Application No
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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.
P,A	US 5 485 031 A (ZHANG GUOBIAO ET AL) 16 January 1996 see column 3, line 31 - column 5, line 37 see column 6, line 36 - line 61 see column 8, line 31 - line 56; figure 8 -----	1,3,5-7, 9,11-18

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter nal Application No
PCT/US 96/15872

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO-A-9304499	04-03-93	NONE		
EP-A-0661745	05-07-95	US-A-	5381035	10-01-95
		JP-A-	7273207	20-10-95
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US-A-5485031	16-01-96	NONE		