

(19) World Intellectual Property  
Organization  
International Bureau



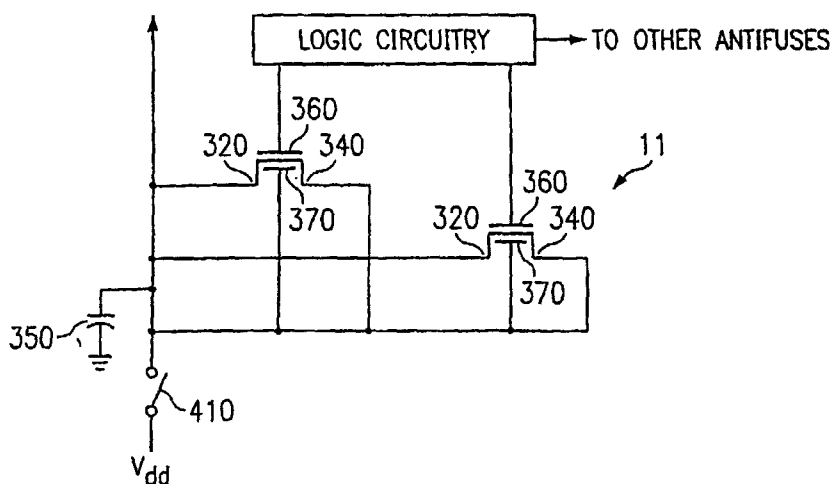
(43) International Publication Date  
12 September 2003 (12.09.2003)

PCT

(10) International Publication Number  
**WO 2003/075346 A3**

- (51) International Patent Classification<sup>7</sup>: **G11C 17/18** (74) Agent: **KINDERMANN, Peter**; Patentanwälte Kindermann, Postfach 1330, 85627 Grasbrunn (DE).
- (21) International Application Number: PCT/EP2003/002243 (81) Designated State (*national*): SG.
- (22) International Filing Date: 5 March 2003 (05.03.2003) (84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 10/092,114 5 March 2002 (05.03.2002) US
- Published:  
— with international search report
- (71) Applicant: **INFINEON TECHNOLOGIES AG** (88) Date of publication of the international search report: 11 March 2004  
[DE/DE]; St. Martin-Strasse 53, 81669 München (DE).
- (72) Inventor: **KOTHANDARAMAN, Chandrasekharan**;  
48 Walnut Avenue, Bogota, NJ 07603 (US).
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ELECTRICAL ANTIFUSE WITH EXTERNAL CAPACITANCE USED FOR PROGRAMMING



(57) Abstract: The present invention provides for the programming on an antifuse having a dielectric disposed between a plurality of conductive elements with one of the conductive elements connected to a capacitor. The antifuse is programmed to an "on" state by precharging the capacitor and then applying a programming voltage to another one of the conductive elements. This results in the breakdown of the interposed dielectric to form a conductive link between the conductive elements. Immediately, following the formation of a conductive link, the electrical energy stored in the capacitor is released through the

conductive link across the dielectric. Further, the capacitor can be common to a plurality of programmable antifuses and the application of the programming voltage serves to select one of the plurality of antifuses to be "blown". This arrangement can be realized in a FET and the device can be easily integrated in the CMOS process commonly used for the manufacture memory arrays and logic circuitry.