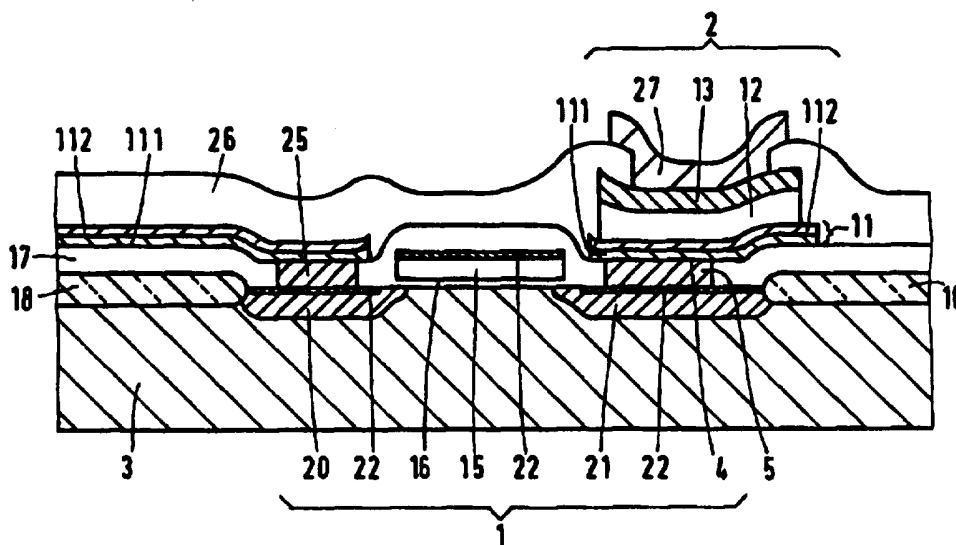




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(54) Title: SEMICONDUCTOR DEVICE COMPRISING A FERROELECTRIC MEMORY ELEMENT WITH A LOWER ELECTRODE PROVIDED WITH AN OXYGEN BARRIER



(57) Abstract

The invention relates to a semiconductor device comprising a semiconductor body (3) with a semiconductor element (1) with an electrically conducting region (5) on which a capacitor (2) forming a memory element is present with a lower electrode (11), an oxidic ferroelectric dielectric (12), and an upper electrode (13), which lower electrode (11) makes electrical contact with the conducting region (5) and comprises a layer with a conductive metal oxide (112) and a layer (111) comprising platinum. The layer with the conductive metal oxide (112) acts as an oxygen barrier during manufacture. The invention also relates to a method of manufacturing such a semiconductor device. According to the invention, the device is characterized in that the layer comprising platinum (111) contains more than 15 atom % of a metal capable of forming a conductive metal oxide, and in that the layer (112) with the conductive metal oxide is present between the layer (111) comprising platinum and the ferroelectric dielectric (12). A good electrical contact between the lower electrode (11) and the conducting region (5) after manufacture is achieved thereby.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 95/00799

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H01L 29/43, H01L 24/51, H01L 21/283, H01G 4/008, H01G 7/06 // H01L 21/8232, H01L 29/78

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)

IPC6: H01L, H01G

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 practicable, search terms used)

DIALOG: 2, 350, 351, 434

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E,A	US 5471363 A (TAKASHI MIHARA), 28 November 1995 (28.11.95), column 2, line 40 - line 67; column 5, line 38 - line 64, figure 3 --	1-9
A	US 5293510 A (KAZUHIRO TAKENAKA), 8 March 1994 (08.03.94), column 2, line 51 - column 4, line 2; column 4, line 42 - column 7, line 23, figures 1,2 --	1-9
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A	EP 0495114 A1 (SEIKO EPSON CORPORATION), 22 July 1992 (22.07.92), see whole document --	1-9

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 95/00799

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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INTERNATIONAL SEARCH REPORT

Information on patent family members

01/04/96

International application No.

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