Title (en)
PROGRAMMABLE ANTIFUSE TRANSISTOR AND METHOD FOR PROGRAMMING THEREOF

Title (de)
PROGRAMMIERBARER ANTIFUSE-TRANSISTOR UND VERFAHREN ZUM PROGRAMMIEREN DESSELBEN

Title (fr)
TRANSISTOR ANTIFUSIBLE PROGRAMMABLE ET PROCÉDÉ POUR SA PROGRAMMATION

Publication
EP 2269193 A1 20110105 (DE)

Application
EP 09733487 A 20090416

Priority
- EP 2009054483 W 20090416
- DE 102008001217 A 20080416
- DE 102009001923 A 20090326

Abstract (en)
[origin: WO2009127670A1] In order to improve a programmable antifuse transistor (100), in particular an n-channel MOS transistor, and a method for programming at least one of said antifuse transistors (100), comprising - at least one gate (G) with a gate terminal (12), - at least one source (S) with a source terminal (14), - at least one drain (D) with a drain terminal (16) and - at least one substrate (10) with a substrate terminal (18), in such a way that active circuits/circuit elements do not have to be located at a significant distance from the antifuse, thereby minimizing the space requirements, without any additional process steps being needed, it is proposed that the level of the potential difference between the source terminal (14) and the substrate terminal (18) is no more than about 0.5 volts, in particular no more than about 0.3 volts, that the drain terminal (16) and the source terminal (14) lie at different potentials and that by adjusting the drain-source voltage and/or the gate-source voltage between source (S) and drain (D) a flow of charge carriers occurs, causing the semiconductor material (20) to be thermally heated between the source (S) and the drain (D) and to locally melt, forming at least one permanently conducting channel between the source (S) and the drain (D).

IPC 8 full level
G11C 17/16 (2006.01)

CPC (source: EP US)
G11C 17/16 (2013.01 - EP US); **G11C 17/18** (2013.01 - EP US); H01L 2924/0002 (2013.01 - EP US)

Citation (search report)
See references of WO 2009127670A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)
WO 2009127670 A1 20091022; EP 2269193 A1 20110105; JP 2011520250 A 20110714; JP 5591792 B2 20140917; US 2011080765 A1 20110407; US 8194431 B2 20120605

DOCDB simple family (application)
EP 2009054483 W 20090416; EP 09733487 A 20090416; JP 2011504452 A 20090416; US 90151510 A 20101009