Title (en)

CIRCUIT AND SYSTEM OF USING JUNCTION DIODE AS PROGRAM SELECTOR FOR ONE-TIME PROGRAMMABLE DEVICES

Title (de)

SCHALTUNG UND SYSTEM ZUR VERWENDUNG EINER FLÄCHENDIODE ALS PROGRAMMWÄHLER FÜR EINMALIG PROGRAMMIERBARE VORRICHTUNGEN

Title (fr)

CIRCUIT ET SYSTÈME D'UTILISATION DE DIODE À JONCTION EN TANT QUE SÉLECTEUR DE PROGRAMME POUR DISPOSITIFS PROGRAMMABLES UNE SEULE FOIS

Publication

EP 3069350 A1 20160921 (EN)

Application

EP 14901820 A 20140919

Priority
- US 201361880916 P 20130921
- US 201461981212 P 20140418
- US 201414485698 A 20140913
- US 2014056676 W 20140919

Abstract (en)

[origin: WO2015042478A1] Junction diodes fabricated in standard CMOS logic processes can be used as program selectors for One-Time Programmable (OTP) devices, such as electrical fuses. At least one portion of the electrical fuse can have at least one extended area to accelerate programming. The program selector can be a diode or MOS that can be turned on through the channel or the source/drain junction. The OTP device can have the at least one OTP element coupled to at least one diode in a memory cell. A method of programming electrical fuses reliably is also disclosed. Advantageously, by controlled programming where programming current is maintained below a critical current, programming is reliable. In another embodiment, a programmable resistive device cell can use at least one MOS device as selector which can be programmed or read by turning on a source junction diode of the MOS or a channel of the MOS.

IPC 8 full level

G11C 17/16 (2006.01); **G11C 17/18** (2006.01)

CPC (source: EP GB)

G11C 13/003 (2013.01 - EP GB); **G11C 17/16** (2013.01 - EP GB); **G11C 17/18** (2013.01 - EP GB); **H10B 63/20** (2023.02 - EP GB); **H10B 63/30** (2023.02 - EP); G11C 2213/72 (2013.01 - EP)

Designated contracting state (EPC)

AL 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 RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2015042478 A1 20150326; CN 106133841 A 20161116; CN 106133841 B 20191220; EP 3069350 A1 20160921; EP 3069350 A4 20170726; EP 3327724 A1 20180530; EP 3327724 B1 20201028; GB 201605289 D0 20160511; GB 2534077 A 20160713

DOCDB simple family (application)

US 2014056676 W 20140919; CN 201480051949 A 20140919; EP 14901820 A 20140919; EP 18151106 A 20140919; GB 201605289 A 20140919