

Title (en)

METHOD FOR DETERMINING A PRODUCTION PARAMETER FOR A RESISTIVE RANDOM-ACCESS MEMORY CELL

Title (de)

VERFAHREN ZUR BESTIMMUNG EINES PRODUKTIONSPARAMETERS FÜR EINE RESISTIVE DIREKTZUGRIFFSPEICHERZELLE

Title (fr)

PROCÉDÉ DE DÉTERMINATION D'UN PARAMÈTRE DE FABRICATION D'UNE CELLULE DE MÉMOIRE VIVE RÉSISTIVE

Publication

EP 3984072 A1 20220420 (FR)

Application

EP 20731866 A 20200611

Priority

- FR 1906259 A 20190612
- EP 2020066240 W 20200611

Abstract (en)

[origin: WO2020249697A1] The invention relates to a method for determining at least one value (tTE_opt, tOX_opt, Xopt) of at least one production parameter (tTE, tOX, x) for a resistive memory cell, the resistive memory cell comprising a thin-film stack, said method comprising the following steps: - providing (S1) a plurality of reference memory cells (10) corresponding to a plurality of technological variants of the thin-film stack; - measuring (S2) an initial resistance value (Ri) for each reference memory cell; - determining (S3, S4), for each reference memory cell (10), a value of a programming parameter chosen from among the resistance in a high-resistance state (RHRS) and the programming window; - establishing (S5) a relationship between the programming parameter and the initial resistance (Ri) based on the initial resistance values (Ri) and the values of the programming parameter; and - determining said at least one value (tTE_opt, tOX_opt, Xopt) of said at least one production parameter (tTE, tOX, x) for which the programming parameter is greater than or equal to a target value (RHRS_tg), based on said relationship between the programming parameter and the initial resistance (Ri) and on at least one dependency relationship between the initial resistance (Ri) and said at least one production parameter (tTE, tOX, x).

IPC 8 full level

H01L 45/00 (2006.01); **H10B 99/00** (2023.01)

CPC (source: EP US)

G11C 13/0069 (2013.01 - US); **H10N 70/011** (2023.02 - EP); **H10N 70/026** (2023.02 - US); **H10N 70/841** (2023.02 - US); **H10N 70/883** (2023.02 - EP US)

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 2020249697 A1 20201217; EP 3984072 A1 20220420; FR 3097368 A1 20201218; FR 3097368 B1 20210625; US 2022336017 A1 20221020

DOCDB simple family (application)

EP 2020066240 W 20200611; EP 20731866 A 20200611; FR 1906259 A 20190612; US 202017618250 A 20200611