

Title (en)
MULTIBIT MULTIFERROIC MEMORY ELEMENT

Title (de)
MEHRBIT-MULTIFERROIC-SPEICHERELEMENT

Title (fr)
ÉLÉMENT DE MÉMOIRE MULTIFERROÏQUE MULTIBITS

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Abstract (en)
[origin: WO2010073211A1] A memory element (1) comprises a source electrode (12), a drain electrode (13) and a gate, wherein a memory state of the memory element is switchable by application of a voltage signal to the gate, and is readable by measuring a current-voltage characteristic between the source electrode and the drain electrode across a channel region (21). The gate comprises a multiferroic material (15). A magnetic field may be generated in the channel region (21). According to the invention, the multiferroic material (15) comprises a first and a second stable domain (15.1; 15.2), wherein a switching state of the first domain is set by application of a first write voltage signal between a gate electrode and the source electrode, and a switching state of the second domain is set by application of a second write voltage signal between the gate electrode and the drain electrode, whereby the memory element is a 2-bit memory element.

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