

DEVICE FOR COMPARING DATA IN A CONTENT-ADDRESSABLE
MEMORY ON SeOI

ABSTRACT

The invention relates, according to a first aspect, to a device for comparing data in a content-addressable memory, comprising:

- a memory cell formed by a first transistor storing a data bit (BIT) and a second transistor storing the complement of the data bit (BITb), the transistors being produced on a semiconductor-on-insulator substrate and each of the transistors having a front control gate and a back control gate that can be controlled to block the transistor;
- a comparison circuit configured to:
 - o operate the first and second transistors in read mode by applying to the front control gate of each of the transistors a nominal read voltage while controlling the back control gate of each of the transistors, one with the proposed bit (DATA), the other with the complement of the proposed bit (DATAb) to block the passing transistor among said transistors if the proposed bit (DATA) and the stored bit (BIT) correspond; and
 - o detect the presence or absence of current on a source line linked to the source of each of the transistors to indicate whether the proposed bit (DATA) and the stored bit (BIT) are identical or not.

FIGURE 5