

ABSTRACT

**NCFET TRANSISTOR COMPRISING A SEMICONDUCTOR-ON-INSULATOR
SUBSTRATE**

The invention relates to an NCFET transistor comprising a semiconductor-on-insulator substrate for a field-effect transistor, successively comprising, from its base to its surface: o a semiconductor carrier substrate (1); o a single ferroelectric layer (2), arranged in direct contact with the carrier substrate (1), which layer is designed to be biased so as to form a negative capacitance; and o an active layer (3) of a semiconductor material, which layer is designed to form the channel of the transistor, and is arranged in direct contact with the ferroelectric layer (2), said NCFET transistor further comprising a channel (3b) which is arranged in the active layer (3a), a source (11) and a drain (12) which are arranged in the active layer (3a) on either side of the channel (3b), and a gate (10) which is arranged on the channel (3b) and is insulated from said channel (3b) by a gate dielectric (30).

Fig. 3