

ABSTRACT**SEMICONDUCTOR STRUCTURE FOR DIGITAL AND RADIOFREQUENCY APPLICATIONS, AND A PROCESS FOR FABRICATING SUCH A STRUCTURE**

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The present invention relates to a semiconductor-on-insulator multilayer structure (1), comprising in succession from a back side to a front side of the structure:

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- a semiconductor carrier substrate (2) of high electrical resistivity, the electrical resistivity of which is comprised between 500 Ω .cm and 30 k Ω .cm,

- a first electrically insulating layer (3),

- an intermediate layer (I),

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- a second electrically insulating layer (5), which has a thickness smaller than that of the first electrically insulating layer (3),

- an active semiconductor layer (6),

the multilayer structure being characterized in that it comprises:

- at least one FD-SOI region, in which the intermediate layer (I) is a semiconductor layer (4),

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- at least one RF-SOI region, adjacent to the FD-SOI region, in which the intermediate layer (I) is a third electrically insulating layer (7), said RF-SOI region comprising at least one radiofrequency component plumb with the third electrically insulating layer (7).

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Fig. 1