

[54] SEMICONDUCTOR DEVICE HAVING SEMICONDUCTOR-ON-INSULATOR STRUCTURE

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[30] Foreign Application Priority Data

Dec. 8, 1988 [JP] Japan 63-310458

[51] Int. Cl.⁵ H01L 29/78

[52] U.S. Cl. 357/23.7; 357/2; 357/4; 357/23.45

[58] Field of Search 357/23.7, 23.15, 2, 357/4

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Assistant Examiner—Tan Ho

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[57] ABSTRACT

A method of producing a semiconductor-on-insulator structure generates a first fixed charge in an insulator layer of a base substrate. An active substrate which is made of a semiconductor is bonded on the insulator layer of the base substrate to thereby generate a second fixed charge at an interface of the insulator layer and the active substrate. The first and second fixed charges have mutually opposite polarities. A portion of the active substrate is removed to form the active substrate to an arbitrary thickness.

8 Claims, 9 Drawing Sheets

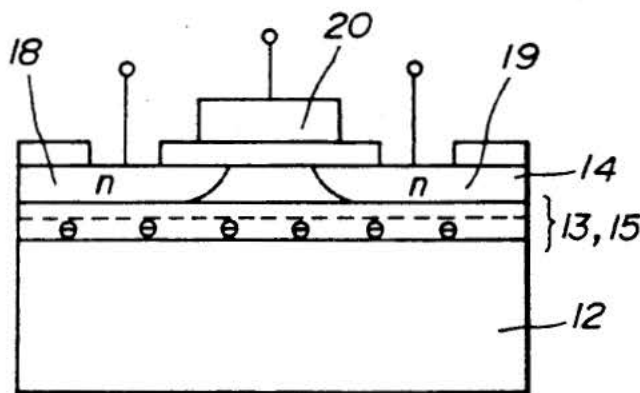


FIG. 1A
PRIOR ART

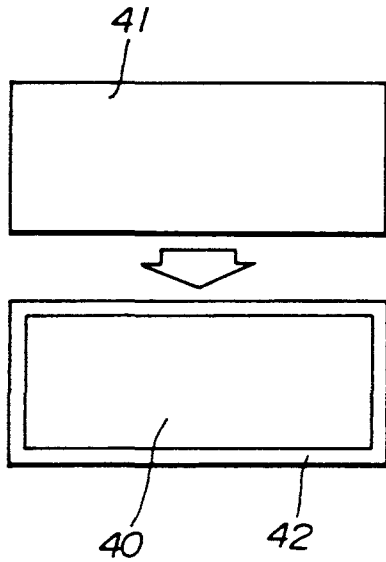


FIG. 1B
PRIOR ART

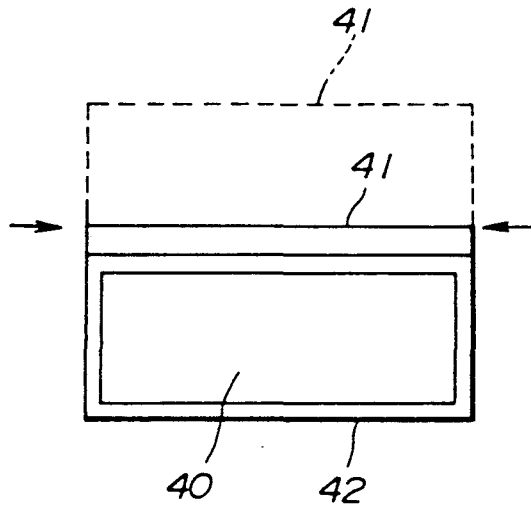


FIG. 2
PRIOR ART

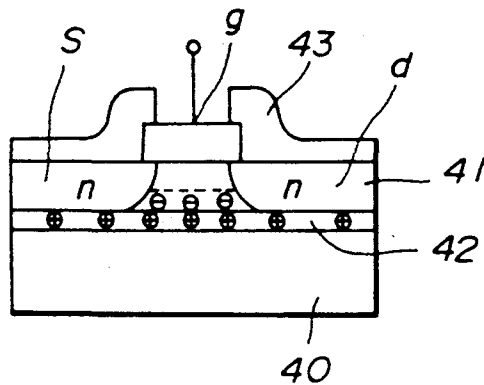


FIG. 3
PRIOR ART

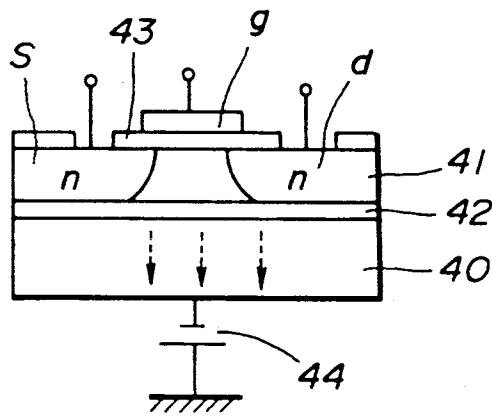


FIG. 4
PRIOR ART

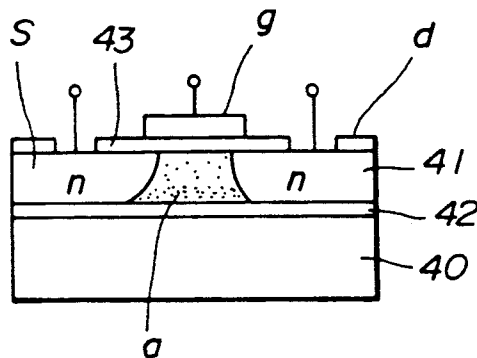


FIG. 5A

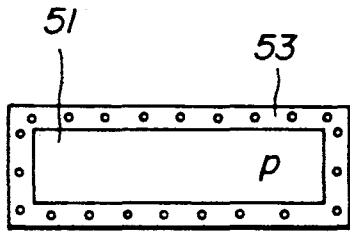


FIG. 5B

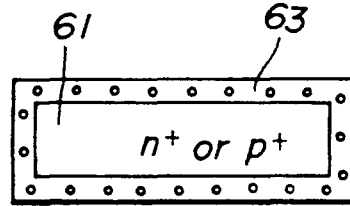


FIG. 5C

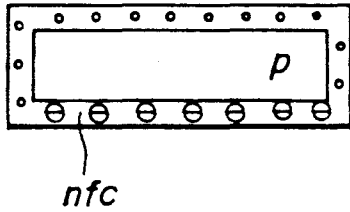


FIG. 5D

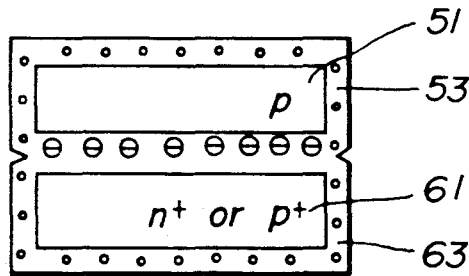


FIG. 5E

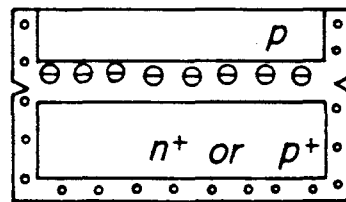


FIG. 6A

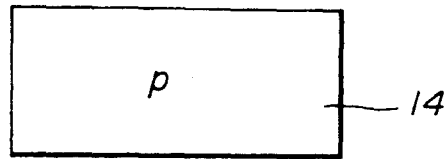


FIG. 6B

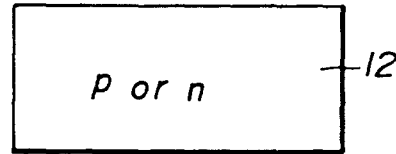


FIG. 6C

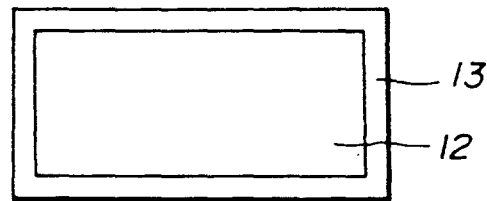


FIG. 6D

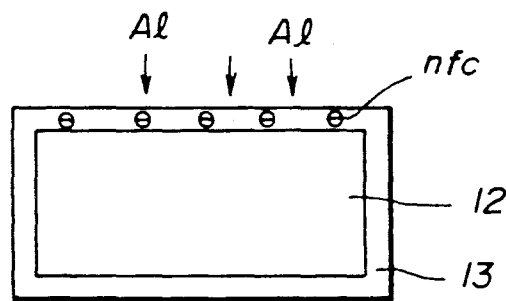


FIG. 6E

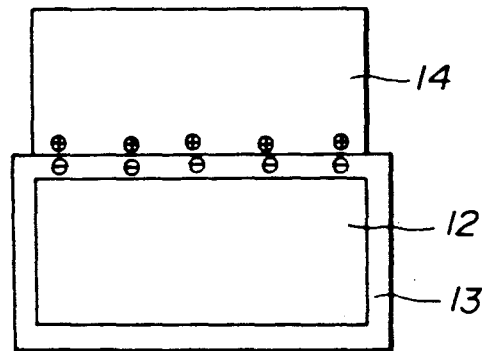
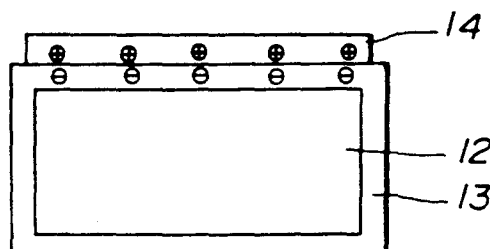


FIG. 6F



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