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KOMIYAMA et al.(10) **Pub. No.: US 2023/0231043 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SEMICONDUCTOR DEVICE****Publication Classification**(71) Applicant: **FUJI ELECTRIC CO., LTD.**,
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(2013.01); **H01L 29/0692** (2013.01)(57) **ABSTRACT**

Provided is a semiconductor device including: a semiconductor substrate having an upper surface and a lower surface and having a drift region of a first conductivity type; a first main terminal provided above the upper surface; a second main terminal provided below the lower surface; a control terminal configured to control whether or not to cause a current to flow between the first main terminal and the second main terminal; and a buffer region provided between the drift region and the lower surface and having a higher doping concentration than the drift region. In a C-V characteristic indicating a relationship between a power supply voltage applied between the first main terminal and the second main terminal and an inter-terminal capacitance between the control terminal and the second main terminal, a region where the power supply voltage is 500 V or more has a peak of the inter-terminal capacitance.

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