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A fabrication of 4H-silicon carbide based-lateral scr for esd protection device (Article)

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Abstract

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This paper demonstrates a silicon carbide-based lateral silicon controlled rectifier (SCR) for use as an electrostatic discharge (ESD) protection device for high current ICs mounted on EVs or self-driving vehicles. The protection devices were designed with three split items and were fabricated with a line width of 0.5 μm. The protection devices were verified in terms of their electrical characteristics by using a transmission line pulse (TLP) system and a curve tracer. The measurements indicate that the devices have a trigger voltage of 165 V and a holding voltage of 40 V. The lateral SCR devices have a breakdown voltage (BV) of 82 V. In addition, the second breakdown current of the demonstrated SCR is above 18 A. Copyright © 2019 NADIA.

Chemistry database information ⓘ

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silicon carbide

Author keywords

Electrostatic discharge (ESD) silicon carbide (SiC) Silicon-controlled rectifier (SCR)

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