Protective circuitry developments related to MOSFET protection setup to the occurrence of electrostatic discharge phenomenon

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Abstract:
Dealing with microelectronic industry, the Electrostatic Discharge has a significant importance regarding the failures related to the solid state devices. The paper is focused on software applications concerning the effects of electrostatic discharges on MOSFET integrated circuitry, using a dedicated computational program. We considered in our approach, some different electronic components with electrostatic discharge protective properties. Our research is useful in electronic domain to select the most adequate electronic equipments, in order to treat and reduce the effects of electrostatic discharges.

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I. Introduction. Electrostatic Discharge

The Electrostatic Discharge (ESD) phenomenon is a great threat to all electronic devices and Integrated Circuits, IC's. An electric charge passing rapidly from a charged body to another can seriously harm the last one. However, there is a lack in a linear mathematical approach which will make it possible to design a circuit capable of producing such a sophisticated current waveform. The commonly accepted electrostatic discharge current waveform is the one set by the IEC 61000–4-2.

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