

## SCR-Based Advanced ESD Protection Device for Low Voltage Application

**Authors :** Bo Bae Song, Byung Seok Lee, Hyun young Kim, Chung Kwang Lee, Yong Seo Koo

**Abstract :** This paper proposed a silicon controller rectifier (SCR) based ESD protection device to protect low voltage ESD for integrated circuit. The proposed ESD protection device has low trigger voltage and high holding voltage compared with conventional SCR-based ESD protection devices. The proposed ESD protection circuit is verified and compared by TCAD simulation. This paper verified effective low voltage ESD characteristics with low trigger voltage of 5.79V and high holding voltage of 3.5V through optimization depending on design variables (D1, D2, D3, and D4).

**Keywords :** ESD, SCR, holding voltage, latch-up

**Conference Title :** ICCDS 2015 : International Conference on Circuits, Devices and Systems

**Conference Location :** Kuala Lumpur, Malaysia

**Conference Dates :** February 12-13, 2015