Abstracts

ESD protection design for 900-MHz RF receiver with 8-kV HBM ESD robustness (2002 Vol. I [MWSYM])

Ming-Dou Ker, Wen-Yu Lo, Chien-Ming Lee, Chia-Pei Chen and Hong-Sing Kao. "ESD protection design for 900-MHz RF receiver with 8-kV HBM ESD robustness (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 537-540 vol.1.

This paper presents a state-of-art ESD protection design for an RF circuit with a human-body-model (HBM) ESD robustness of 8 kV. By including a turn on efficient power-rails clamp circuit into the RF circuit, the ESD clamp devices of the RF input pin are operated in the forward-biased conduction, rather than the traditional junction breakdown condition Therefore, the dimension of ESD devices for the RF input pin can be further downsized to reduce the input capacitance loading for the RF signal. This design has been successfully applied in a 900-MHz RF receiver and fabricated in 0.25-/spl mu/m CMOS process with a thick top metal layer. The experimental results have confirmed that its ESD robustness is as high as >8 kV under the HBM ESD test.

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