Abstracts

RF power performance of LDMOSFETs on SOI: an experimental comparison with bulk Si LDMOSFETs

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J.G. Fiorenza and J.A. del Alamo. "RF power performance of LDMOSFETs on SOI: an experimental comparison with bulk Si LDMOSFETs." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 43-46.

We have simultaneously fabricated RF power LDMOSFETs on SOI and bulk-silicon wafers using an identical process. This paper directly compares their RF power performance at 1.9 GHz. We use this comparison to assess the suitability of SOI for RF power applications. The gain and linearity of the SOI LDMOSFETs match those of the bulk-silicon devices. The SOI devices exhibit substantially improved power efficiency, up to 8 percentage points. This improvement in PAE is shown to be related to reduced parasitic substrate loss in the SOI LDMOSFETs.

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