Abstracts

Prediction of IMD in LDMOS transistor amplifiers using a new large-signal model

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In this paper, the intermodulation distortion (IMD) behavior of LDMOS transistors is treated. First, an analysis is performed to explain measured IMD characteristics in different classes of operation. It is shown that the turn-on region plays an important role in explaining measured IMD behavior, which may also give a clue to the excellent linearity of LDMOS transistors. Thereafter, with this knowledge, a new empirical large-signal model with improved capability of predicting IMD in LDMOS amplifiers is presented. The model is verified against various measurements at low as well as high frequency in a class-AB power amplifier circuit.

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