Abstracts

Multi-Tone Transistor Characterization for Intermodulation and Distortion Analysis

R. Hajji, F. Beauregard and F.M. Ghannouchi. "Multi-Tone Transistor Characterization for Intermodulation and Distortion Analysis." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1691-1694.

This paper presents an experimental study of the effect of different multi-tone excitations on the intermodulation rejection (IMR) of GaAs MESFETs. The IMR parameter is very important in transistor linearity investigation. The objective of this work is to determine the input power backoff required for MESFET operation to provide the same IMR for different tone-number excitations, and the IMR degradation as the number of tones increases at a specific transistor loading. For this purpose, 2, 4, 8, 16 and 32 tones with 100 KHz spacing were applied at the input the transistor under test and its IMR was calculated for an input power sweep and a given loading. The results show that, there is a certain back-off input power level with which the IMR is identical for the different excitation conditions. This work experimentally validate the theoretical one published in the literature.

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