Abstracts

Intermodulation distortion in pseudomorphic HEMTs and an extension of the classical theory

M.J. Bailey. "Intermodulation distortion in pseudomorphic HEMTs and an extension of the classical theory." 2000 Transactions on Microwave Theory and Techniques 48.1 (Jan. 2000 [T-MTT]): 104-110.

Pseudomorphic high electron-mobility transistors (pHEMTs) offer superior RF and microwave performance and, in particular, exhibit exceptional intermodulation distortion characteristics that are not adequately modeled by the classical theory. Intermodulation products are typically 8-10 dB below classical expectations, and can be as much as 12 dB lower. An extension of the classical theory is presented, which allows for a better understanding of this phenomenon in terms of the device transconductance characteristic. Experimental data is included to provide quantitative verification based on both device and amplifier results. pHEMT-based devices have the potential to satisfy the spectral performance requirements of today's wireless systems with improved dc-to-RF efficiencies.

❑ Return to main document.