Abstracts

Reliability and efficiency aspects of harmonic-control amplifiers

B. Ingruber. "Reliability and efficiency aspects of harmonic-control amplifiers." 1999 Microwave and Guided Wave Letters 9.11 (Nov. 1999 [MGWL]): 464-466.

Reverse gate current flowing through a power device of a harmonic control microwave amplifier reduces its power-added efficiency (PAE) and its reliability. This study reports on theoretical analysis and measurement results of the breakdown behavior of a GaAs MESFET at class F and half sinusoidally driven harmonic control amplifier (hHCA) operation. In a class F amplifier reverse gate current is observed in power saturation and PAE decreases with increasing drain supply voltage. On the other hand, in an hHCA any reverse gate stress is avoided due to the reduction of input voltage swing. This improves not only PAE, but also reliability.

❑ Return to main document.