Abstracts

Analysis and Design of an X-Band Actively Compensated IMPATT Diode Amplifier

A.S. Bains and C.S. Aitchison. "Analysis and Design of an X-Band Actively Compensated IMPATT Diode Amplifier." 1979 Transactions on Microwave Theory and Techniques 27.1 (Jan. 1979 [T-MTT]): 17-23.

This paper shows how broad-banding of an IMPATT diode amplifier can be achieved using a circuit technique known as active reactance compensation. Theoretical analysis and experimental results both show that the gain-bandwidth products of an uncompensated IMPATT amplifier improves from G/sup 1/2/B = k to G/sup 1/4/B = 2k (where k is a constant) for the same amplifier actively compensated. The measured 3-dB bandwidth of 230 MHz for a 9.0-GHZ amplifier having a gain of 10 dB is improved to 700 MHz at the same gain.

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