Abstracts

A Low-Noise and Wide-Band Esaki Diode Amplifier with a Comparatively High Negative Conductance Diode at 1.3 Gc/s

J. Hamasaki. "A Low-Noise and Wide-Band Esaki Diode Amplifier with a Comparatively High Negative Conductance Diode at 1.3 Gc/s." 1965 Transactions on Microwave Theory and Techniques 13.2 (Mar. 1965 [T-MTT]): 213-223.

This paper discusses the stability problem, output power, saturation level, and noise figure of Esaki diode amplifiers, and describes design considerations of the broadband circulator type amplifier with a large negative conductance diode. An experimental amplifier with a diode which has a negative resistance of -25 ohms is also described. The amplifier has a 3 dB bandwidth of 20 per cent, 18 dB gain, and a 3.6 dB noise figure including 0.3 dB insertion loss of the circulator. The output level for which the gain is 1 dB lower than the small signal gain is -17 dBm. These experimental results are in fair agreement with those estimated theoreticaly.

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