Abstracts

Noise Characterization of Schottky Barrier Diodes for High-Frequency Mixing Applications

S. Palczewski, A. Jelenski, A. Grub and H.L. Hartnagel. "Noise Characterization of Schottky Barrier Diodes for High-Frequency Mixing Applications." 1992 Microwave and Guided Wave Letters 2.11 (Nov. 1992 [MGWL]): 442-444.

The noise performance of Schottky barrier diodes for mixing applications is the most important aspect when operating at millimeter and submillimeter wavelengths. Therefore, the understanding and characterization of the diode noise sources plays an important role for the modeling of the diode performance. Experimental noise characteristics of diodes with different parameters are presented and discussed with respect to the dominant noise sources. It is shown that diodes with high doped epi-layers cannot be described by the common noise sources. Excellent agreement with measured and calculated results can be achieved for all diodes when the noise contribution due to interracial traps in the epi-layer is taken into account. The separate sections are devoted to discuss the basic noise model of mm-wave Schottky barrier diode and a concept of the noise temperature measurement.

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