Abstracts

Ultimate Noise Figure and Conversion Loss of the Schottky Barrier Mixer Diode

M.R. Barber and R.M. Ryder. "Ultimate Noise Figure and Conversion Loss of the Schottky Barrier Mixer Diode." 1966 G-MTT International Microwave Symposium Digest 66.1 (1966 [MWSYM]): 13-18.

Considerable interest has recently been shown in the use of the epitaxial Schottky barrier (ESBAR) diode as a microwave frequent y down-converter. For the first time it has become possible to surpass the performance of the redoubtable point-contact diodes, through the use of photo resist techniques to achieve small areas and epitaxial material to achieve low series resistance. The new diodes are also more reproducible, have much lower reverse current leakage, lower l/f noise, and can be designed for much higher dynamic range. Herein we calculate that they should exhibit overall calculated noise figures as low as 3 dB at X-band when the image is short-circuited and the following i-f amplifier has a 2 db noise figure.

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