Abstracts

A Comparison of Planar Doped Barrier Diode Performance Versus Schottky Diode Performance in a Single Balanced, MIC Mixer with Low LO Drive

J.N. Poelker and R.S. Robertson. "A Comparison of Planar Doped Barrier Diode Performance Versus Schottky Diode Performance in a Single Balanced, MIC Mixer with Low LO Drive." 1995 Transactions on Microwave Theory and Techniques 43.6 (Jun. 1995 [T-MTT]): 1241-1246.

This paper demonstrates that an unbiased GaAs planar doped barrier (PDB) diode, single balanced, Ku-band mixer achieves conversion loss performance comparable to a bias-optimized GaAs Schottky design at low local oscillator (LO) power levels for identical RF circuits. An experimental, side-by-side, performance comparison as a function of LO power is presented along with a harmonic balance (HB) simulation. The PDB diode is of interest for its zero-bias requirement and the high pulsed peak power handling potential for low-cost radars.

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