Abstracts

A Novel Whiskerless Schottky Diode for Millimeter and Submillimeter Wave Application

W.L. Bishop, K. McKinney, R.J. Mattauch, T.W. Crowe and G. Green. "A Novel Whiskerless Schottky Diode for Millimeter and Submillimeter Wave Application." 1987 MTT-S International Microwave Symposium Digest 87.2 (1987 Vol. II [MWSYM]): 607-610.

A novel whiskerless Schottky diode has been developed in which shunt capacitance is minimized by means of an etched surface channel. This structure is easily fabricated and the DC I-V characteristics areas good as those of the best available whisker-contacted devices. Preliminary RF characterization in an unoptimized mount at 110 GHz has yielded room temperature SSB mixer noise temperature of 950 K and SSB conversion loss of 6.4 dB. The diode is robust and can be operated at cryogenic temperatures. Potential applications include waveguide and planar mixers, planar arrays, multipliers, varactor tuners, and microwave integrated circuits.

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