Abstracts

Design and verification of a novel crossed dipole structure for quasi-optical frequency doublers

S. Helbing, M. Cryan, F. Alimenti, P. Mezzanotte, L. Roselli and R. Sorrentino. "Design and verification of a novel crossed dipole structure for quasi-optical frequency doublers." 2000 Microwave and Guided Wave Letters 10.3 (Mar. 2000 [MGWL]): 105-107.

A novel structure suitable for quasi-optical frequency doublers is presented. It is based on the crossed dipole structure, but uses four diodes in a bridge configuration to form a balanced multiplier layout and incorporates the necessary DC path in a simple way within the structure. The entire structure is analyzed using the lumped element (LE)-FDTD method. To allow a comparison of the results, the concept of quasi-optical effective aperture is introduced. Simulated as well as measured quasi-optical results are resented and a good agreement is achieved.

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