Abstracts

Membrane-supported coplanar waveguides for MMIC and sensor application

A. Dehe, H. Klingbeil, C. Weil and H.L. Hartnagel. "Membrane-supported coplanar waveguides for MMIC and sensor application." 1998 Microwave and Guided Wave Letters 8.5 (May 1998 [MGWL]): 185-187.

Membrane-supported coplanar waveguides (CPWs) are needed for low-dispersive and low-loss millimeter- and submillimeter waves as well as for power sensor applications. The authors demonstrate CPWs on polyimid membranes micromachined on gallium arsenide (GaAs) that meet the requirements of a typical microwave monolithic integrated circuit (MMIC) process. The influence of the design parameters is simulated by finite difference in frequency domain (FDFD), in excellent agreement with the experiment. For a membrane CPW with ground to ground spacing of only 50 /spl mu/m and characteristic impedance of 115 /spl Omega/, relative effective dielectric constants near 1.02 and attenuation of 0.14 dB/mm at 25 GHz have been achieved.

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