Abstracts

Membrane-supported copper E-plane circuits

W.Y. Liu, D.P. Steenson and M.B. Steer. "Membrane-supported copper E-plane circuits." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 539-542 vol.1.

This paper reports the realization of copper E-plane circuits on a micromachined 5 micron thick organic membrane. As the membrane is both thin and optically smooth, dielectric loss and the excitation of surface modes are virtually eliminated. Measured losses of lines are no more than 0.4 dB/cm at W-band. The relatively low-cost low-temperature process uses a photosensitive resin (SU-8) to form a self-supporting membrane on which devices can be mounted. The realization a finline resonator and an E-plane bandpass filter are presented.

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