Abstracts

Micromachined Coplanar Waveguides in CMOS Technology

V. Milanovic, M. Gaitan, E.D. Bowen and M.E. Zaghloul. "Micromachined Coplanar Waveguides in CMOS Technology." 1996 Microwave and Guided Wave Letters 6.10 (Oct. 1996 [MGWL]): 380-382.

Coplanar waveguides were fabricated in standard complimentary metal-oxide semiconductor (CMOS) with post-processing micromachining. IC'S were designed with commercial CAD tools, fabricated through the MOSIS/sup 1/ service, and subsequently suspended by maskless top-side etching. Absence of the lossy silicon substrate after etching results in significantly improved insertion loss characteristics, dispersion characteristics, and phase velocity. Measurements were performed at frequencies from 1 to 40 GHz, before and after micromachining. These show improvement in loss characteristics of orders of magnitude. For the micromachined line, loss does not exceed 4 dB/cm. Before etching, loss as high as 38 dB/cm is measured. Phase velocity V/sub P/ /spl ap/ 0.8 - c is achieved for the micromachined line,

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