Abstracts

A novel planar silicon waveguide filter at 45 GHz based on a periodic structure

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A novel planar silicon waveguide two-pole filter at 45 GHz with a 2.5% equiripple bandwidth is described in this paper. This filter is comprised of a periodic structure of holes that form coupled silicon resonators. We first describe the geometrical, physical and electrical characteristics of the periodic structure, the silicon resonator and the CPW I/O ports applying the Finite Element Method (FEM). Then a two-pole filter was designed and simulated at the IRCOM, and fabricated at the Georgia Institute of Technology. Measurements are presented.

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