Abstracts

A Class of Radiationless Wideband Coplanar Waveguide Open Stubs for Monolithic and Hybrid Integrated Circuits

K. Wu, R. Sadat, D. Klemer and R.G. Bosisio. "A Class of Radiationless Wideband Coplanar Waveguide Open Stubs for Monolithic and Hybrid Integrated Circuits." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 277-280.

A class of wideband coplanar waveguide open stubs is proposed for applications in passive and active monolithic and hybrid microwave integrated circuits. The novel stubs feature radiationless characteristics based on convergent anti-symmetrical electric fields of the CPW fundamental mode along a circular aperture. A space-spectral domain approach is used to accurately determine characteristics of the proposed CPW open stubs. The effect of conductor losses is assessed by a 2D self-consistent analysis using the method of lines. It is found that radiation losses and wideband performance can be improved simultaneously by appropriately compensating the central conductor of the CPW. The proposed CPW open stubs are fabricated using a GaAs MMIC process. It is shown that the theory and accurate on-wafer measurement have excellent agreement.

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