Abstracts

A super-compact super-broadband tapered uniplanar PBG structure for microwave and millimeter-wave applications

C. Caloz and T. Itoh. "A super-compact super-broadband tapered uniplanar PBG structure for microwave and millimeter-wave applications." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1919-1922 vol.3.

A novel uniplanar photonic bandgap (PBG) structure, consisting of a tapered array of stepped-impedance slot resonators, is introduced. This structure, which is of low cost and easy design/fabrication, exhibits a low-pass behavior, and is characterized by a super-compact size (much smaller than conventional PBGs), a huge gap (about 150%), an excellent insensitivity to circuitry location on top of it and a very low return loss (negligible radiation) in the stop-band. The working principle of the PBG is explained and its performances are demonstrated by simulation and measurement results for different configurations. Simple design guidelines are provided.

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