Abstracts

A class of novel uniplanar series resonators and their implementation in original applications

K. Hettak, N. Dib, A.-F. Sheta and S. Toutain. "A class of novel uniplanar series resonators and their implementation in original applications." 1998 Transactions on Microwave Theory and Techniques 46.9 (Sep. 1998 [T-MTT]): 1270-1276.

A class of novel millimetric uniplanar series resonators are presented, which can be used in monolithic and hybrid uniplanar microwave integrated circuits (MIC's). The proposed structures are able to demonstrate low radiation and compactness characteristics, which are attractive for passive and active monolithic and hybrid integrated circuits. A principle of achieving these high-quality circuits is described and also confirmed by experimental and theoretical results, which are in good agreement up to 50 GHz. To illustrate the features of the proposed series resonators and demonstrate their effectiveness, two classes of miniature coplanar waveguide (CPW) filters (namely, low-pass and bandpass) are designed using these resonators. The developed low-pass filter has some important advantages such as low insertion loss in passband, very wide stopband, high cutoff rates, small size, low number of elements, and an effective control of spurious signals. On the other hand, the newly developed bandpass filter provides an alternative, yet compact, structure to classical filters. Obviously, many other classes of filters or passive components can also be designed.

❑ Return to main document.