Abstracts

A design of planar elliptic bandpass filter using SMD type partially metallized rectangular dielectric resonators

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In this paper, thin planar bandpass filter structures with elliptic, Chebychev, or notch filter response, using 2-D arrays of metallized rectangular dielectric waveguide type resonators on PCB are presented. Electrode pads on open-end surfaces (OEFs) of the resonator are used as coupling ports to microstrip lines. Because the resonant frequency of rectangular waveguide type resonator is not sensitive to height of the resonator, the filters can be used as a planar or thin filter structure on PCB like other SMD chip devices. A 4-pole elliptic function filter is designed and constructed. The measured frequency responses of the filter agreed well with theoretical predictions.

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