Abstracts

Theory and experiment of novel microstrip slow-wave open-loop resonator filters

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This paper presents the theory and experiment of a new class of microstrip slow-wave open-loop resonator filters. A comprehensive treatment of capacitively loaded transmission line resonator is described, which leads to the invention of microstrip slow-wave open-loop resonator. The utilization of microstrip slow-wave open-loop resonators allows various filter configurations including those of elliptic or quasi-elliptic function response to be realized. The filters are not only compact size due to the slow-wave effect, but also have a wider upper stopband resulting from the dispersion effect. These attractive features make the microstrip slow-wave open-loop resonator filters promising for mobile communications, superconducting and other applications. Two filter designs of this type are described in detail. The experimental results are demonstrated and discussed.

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