

Abstracts

Novel TE₁₀/spl delta// rectangular-waveguide-type resonators and their bandpass filter applications

Hee Yong Hwang and Sang-Won Yun. "Novel TE₁₀/spl delta// rectangular-waveguide-type resonators and their bandpass filter applications." 2002 Transactions on Microwave Theory and Techniques 50.7 (Jul. 2002 [T-MTT]): 1821-1831.

New dielectric-filled rectangular-waveguide-type TE₁₀/spl delta// resonators are presented. A dielectric-filled rectangular waveguide section (WGS) has inductive impedance at the open-end faces. Using this property and the frequency dependency of the wave impedance of the WGS, we calculated the resonant frequency and the slope parameter of the waveguide-type resonators. The resonant frequency depends strongly on the width of the WGS and loosely on the height and the length. The calculated resonant frequencies agree well with measured data. One of the proposed bandpass filters shows highly reduced spurious up to three times the center frequency. Quality factors of the resonator and effects of a housing are also discussed.

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