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عنوان مقاله:

Design of microstrip lowpass filter with sharp roll-off using elliptical and T-shaped resonators

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نویسندگان:

Seyed Mohammad Hadi Mousavi - *Department of Electrical Engineering, Collage of Science, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran*

Seyed Vahab AL-Din Makki - *Department of Electrical Engineering, Faculty of Engineering, Razi University, Kermanshah, Iran*

Gholam Reza Karimi - *Department of Electrical Engineering, Faculty of Engineering, Razi University, Kermanshah, Iran*

خلاصه مقاله:

In this letter, a novel microstrip lowpass filter (LPF) using stepped impedance resonators, radial stubs and T-shaped patches is proposed. The insertion loss of the proposed filter is less than 0.5 dB in frequency range from DC up to 1.62 GHz. The transition band is from 1.70 up to 1.863 GHz with -3 and -40 dB attenuation points, respectively. LC equivalent circuit of the proposed main resonator is calculated precisely. The stopband bandwidth with a suppression factor better than 23 dB is from 1.84 up to 15 GHz, hence a wide stopband with high suppression is accomplished. The results demonstrate that a roll-off rate of 227 dB/GHz, relative stopband bandwidth of 156% and a high figure-of-merit (FOM) of 27381 have been achieved. Furthermore, the proposed lowpass filter exhibits a small circuit of where is the guided wavelength at 3 dB cutoff frequency

کلمات کلیدی:

T-shaped resonator, Elliptical resonator, Microwave filters, Microstrip filters, Stepped impedance resonator

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