Abstracts

A compact semi-lumped low-pass filter for harmonics and spurious suppression

J.-W. Sheen. "A compact semi-lumped low-pass filter for harmonics and spurious suppression." 2000 Microwave and Guided Wave Letters 10.3 (Mar. 2000 [MGWL]): 92-93.

A semi-lumped parallel resonance circuit was employed to design a very compact low-pass filter. The semi-lumped shunt arm consists of a capacitor and a transmission line section. In such an arrangement, two finite attenuation poles can be generated near the passband edge. As a result, the proposed filter enjoys sharper cutoff and fewer filter orders than those of the conventional low-pass filters. In addition, these two attenuation poles can be properly designed to suppress the second and third harmonics generated from power amplifier and frequency source. A low-temperature cofired-ceramic (LTCC) multilayer-ceramic (MLC) low-pass filter and a PCB low-pass filter with a 0402 chip capacitor were designed and tested. Experimental results demonstrate the capability of this filter in harmonics and spurious suppression.

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