MICROWAVE MICRSTRIN BANDPASS FILTERS USING
STEPPED-IMPEDANCE HAIRPIN RESONATORS.

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ABSTRACT: The miniaturization of hairpin band-pass filters by employing two high-permittivity ceramic substrates (with respective dielectric constants of 9.7 and 28.6) are investigated. Microwave dielectric ceramics with high permittivity are commonly applied in several microwave communication components. Fig. 1 shows the basic layout of the stepped-impedance hairpin resonator. The stepped-impedance hairpin resonator consists of the single transmission line Ls and coupled lines with a length of Lc. Zs is the characteristic impedance of the single transmission line Ls, Zoe and Zoo are the even- and odd-mode impedance of the