Abstracts

Theoretical analysis of surface mountable triple-mode ceramic cavity

Y. Tikhov and Jeong Phill Kim. "Theoretical analysis of surface mountable triple-mode ceramic cavity." 2002 Microwave and Wireless Components Letters 12.8 (Aug. 2002 [MWCL]): 302-304.

A novel surface-mountable ceramic cavity has been considered. The high-permittivity ceramic filling of the basic triple-mode waveguide cavity makes the proposed structure physically small. Integrated microstrip to ceramic filled waveguide transitions provide effective coupling between ceramic cavity and planar circuit. A key point of the suggested theory consists of utilization of weighted Gegenbauer polynomials as the basis functions for the Galerkin's procedure. Such a choice of basis functions guarantees high accuracy and efficiency for the entire simulation algorithm. As an application example, a three-pole L-band filter with advanced high-quality factor is demonstrated.

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