Abstracts

Low temperature cofired ceramic (LTCC) ridge waveguide bandpass filters

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Design of generalized ridge waveguide evanescent mode bandpass filters and their transitions for LTCC application is described. The design is based on the rigorous mode-matching modeling which allows the inclusion of the higher order mode interactions. An X-band single ridge waveguide filter and its transition is simulated and successfully built in an LTCC package. The experimental results show good agreement with the theoretical results, the feasibility of 3-D filter embedding in an LTCC package, and the excellent features of the ridge waveguide filter such as compactness and low loss. The experimental results are compared to those of an LTCC inductive windows filter, showing significant advantages of smaller size and comparable loss of the ridge waveguide realization.

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