Abstracts

A Low-Loss 20 GHz Micromachined Bandpass Filter

C.-Y. Chi and G.M. Rebeiz. "A Low-Loss 20 GHz Micromachined Bandpass Filter." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1531-1534.

We report on the results of a state-of-the-art planar inter-digitated bandpass filter at K-band by using micromachining techniques. In this design, a microwave model was first built at 850 MHz to simulate the K-band filter, and the 20 GHz micromachined filter was fabricated based on the 850 MHz microwave model. Excellent agreement has been achieved between the microwave model and the 20 GHz filter. The micromachined filter exhibits a return loss better than -15 dB within the passband and a 1.7 dB port-to-port insertion loss at 20.3 GHz. A grounded coplanar waveguide with a micro-machined mouse-hole shielding structure has also been carefully examined. The grounded coplanar waveguide structure is used in the micromachined filter as the input/output feeding line and exhibits a return loss better than -20 dB up to 32 GHz.

❑ Return to main document.