Abstracts

A low-loss 5GHz bandpass filter using HTS coplanar waveguide quarter-wavelength resonators

Zhewang Ma, H. Suzuki, Y. Kobayashi, K. Satoh, S. Narahashi and T. Nojima. "A low-loss 5GHz bandpass filter using HTS coplanar waveguide quarter-wavelength resonators." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1967-1970 vol.3.

A novel low-loss high temperature superconductor (HTS) filter is proposed by using coplanar waveguide quarter-wavelength resonators. A 4-pole Chebyshev bandpass filter with a center frequency 5.0GHz and a 0.01dB-ripple fractional bandwidth 3.2% is designed and fabricated using a YBCO film deposited on a MgO substrate. The frequency response of the filter measured at 60K agrees very well with the theoretical prediction. The measured insertion loss is 0.22dB, the lowest reported so far for HTS coplanar waveguide filters.

❑ Return to main document.