Abstracts

Narrow-Band YBCO Superconducting Parallel-Coupled Coplanar Waveguide Band-Pass Filters at 10 GHz

R. Weigel, M. Nalezinski, A.A. Valenzuela and P. Russer. "Narrow-Band YBCO Superconducting Parallel-Coupled Coplanar Waveguide Band-Pass Filters at 10 GHz." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1285-1288.

High-T/sub c/ superconducting coplanar waveguide (CPW) three-pole, four-pole, and five-pole band-pass filters fabricated from in situ sputter deposited YBa/sub 2/Cu/sub 3/O/sub 7-x/ thin-films on LaAlO/sub 3/ substrates with dimensions 10x25 mm/sub 2/ are presented. The design is based on the evaluation of CPW test chips integrating differing resonators and transmission line structures. The measured data were fed into a CAD program using general transmission line elements instead of CPW elements. Both YBCO and gold versions were constructed and mounted in gold-plated brass test fixtures. At liquid nitrogen temperature (77 K), the filters were characterized by center frequencies at 10 GHz and bandwidths smaller than 1.3 %. Total insertion loss and out-of-band rejection values of the complete packaged devices were better than 2.2 dB and 30 dB, respectively.

❑ Return to main document.