Abstracts

High Q-Value Resonators for the SHF-Region Based on TBCCO-Films (Short Papers)

M. Manzel, S. Huber, H. Bruchlos, S. Bornmann, P. Gornert, M. Klinger and M. Stiller. "High Q-Value Resonators for the SHF-Region Based on TBCCO-Films (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.7 (Jul. 1996, Part II [T-MTT] (Special Issue on the Microwave and Millimeter Wave Applications of High Temperature Superconductivity)): 1382-1384.

We used a sapphire dielectric resonator with a copper cylindrical shield and two endplates replaced by HTS layers for very accurate surface resistance measurements of TBCCO films made by the two step method. This technique allows for the preparation of high quality 2-in diameter T1-2223 superconducting films with surface resistance values (R/sub s/) smaller than 100 µOmega at 5.6 GHz and 77 K. The use of these films in sapphire dielectric resonators yields resonators for the C-band with very high unloaded quafity factors (Q/sub o/ >2 x 10/sup 6/ at 77 K). Such high Q/sub o/ -values are not reached with any conventional resonators of comparable size.

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