Abstracts

Superconducting filter for IMT-2000 band (Dec. 2000 [T-MTT])

G. Tsuzuki, M. Suzuki and N. Sakakibara. "Superconducting filter for IMT-2000 band (Dec. 2000 [T-MTT])." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2519-2525.

In this paper, a new design of microstrip-line superconducting filters for IMT-2000 band application is presented. The design features high selectivity by means of creating transmission zeros and using many resonators. As a demonstration, 16- and 32-pole filters were fabricated using YBCO films on a half-area and on the full area of 3-in-diameter MgO wafers, respectively. Excellent attenuation of more than 30 dB, 420 kHz from the lower band edge, and 400 kHz from the upper band edge for the 32-pole filter was achieved. The filters were tuned not with mechanical tuning screws, but with a dielectric film. The tuning was carried out based on a novel method of measurement. These techniques are also described.

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