Abstracts

Superconducting Millimeter-Wave E-Plane Filters

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In this paper, we report the measured performance of a three-pole E-plane filter constructed from high-T/sub c/ superconducting bulk materials at 34.5 GHz. Experimental results are presented for the insertion loss and return loss of the filter at 77 K. The problems associated with the use of bulk materials at the millimeter-wave range are addressed. Other possible superconducting waveguide filter configurations are proposed. While the experimental results are taken at low input power level, the current distribution inside the filter structure is calculated, and the power handling capability of the superconducting filter is discussed.

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