Abstracts

Characteristic Impedance Design Considerations for a High-Speed Superconducting Packaging System (Short Papers)

J. Temmyo and H. Yoshikiyo. "Characteristic Impedance Design Considerations for a High-Speed Superconducting Packaging System (Short Papers)." 1985 Transactions on Microwave Theory and Techniques 33.5 (May 1985 [T-MTT]): 414-417.

The characteristic impedance influences of superconducting packaging systems (in particular, Josephson packaging) on the degradation in transmitted signal rise time, amplitude distortions and crosstalk, signal propagation delay, and amplitude decay at the inductive and resistive connectors with matched capacitors are quantitatively evaluated by using the ASTAP computer simulation. The present choice of the characteristic impedance Z/sub 0/ = 10- 12 Omega for a superconducting stripline is inadequate. Higher impedances of Z/sub 0/=40-50 Omega are useful from the standpoint of noise performance improvement. At the same time, a higher impedance choice can make the ground connector numbers of each connector decrease, which is preferable for a large-scale packaging system.

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