Abstracts

Mixed Lumped and Distributed Network Applied to Superconducting Thin-Film Broadband Impedance Transforming

L. Zhu and L.J.P. Linner. "Mixed Lumped and Distributed Network Applied to Superconducting Thin-Film Broadband Impedance Transforming." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 635-638.

In this paper, a detailed analysis of properties of mixed lumped and distributed (MLD) lossless network is first carried out, from which the reason why the MLD network can be used as an extreme impedance transformer between source and load impedances without using extreme impedance values in the network is found. Then, the lossy transformation technique, which can be employed for the transformation between MLD lossy or lossless network and lumped lossless one, is discussed and compared with the method developed by Carlin. Finally, as an example, one quarter-wave and two MLD lossless broadband impedance transformers are synthesized for transforming extremely low input or output impedance of a superconducting device to 500 microwave system and the lossy performance of one of the MLD transformers is estimated by means of the lossy transformation technique.

❑ Return to main document.