Abstracts

Analysis and design of novel structures of artificial transmission lines for MMIC/MHMIC technology

Yansheng Xu and R.G. Bosisio. "Analysis and design of novel structures of artificial transmission lines for MMIC/MHMIC technology." 1999 Transactions on Microwave Theory and Techniques 47.1 (Jan. 1999 [T-MTT]): 99-102.

In this paper, some new types of artificial transmission lines, compatible with monolithic-microwave integrated-circuit/miniature hybrid-microwave integrated-circuit technology are presented. In the new designs, short subsections of different lines are connected together to achieve the needed performance of various transmission-line functions such as impedance transformation, power coupling, etc. Theoretical calculations are given and some typical design data are provided, including models of extremely low impedance lines, which are very practical in the design of microwave power amplifiers and oscillators using heterojunction bipolar transistors or high electron-mobility transistors. Calculation results are validated by simulations and experiments. The proposed structures are very flexible and can easily provide transmission lines with widely varying characteristics.

❑ Return to main document.