Abstracts

A novel interpretation of transistor S-parameters by poles and zeros for RF IC circuit design

S.-S. Lu, T.-W. Chen, H.-C. Chen and C.-C. Meng. "A novel interpretation of transistor S-parameters by poles and zeros for RF IC circuit design." 2001 Transactions on Microwave Theory and Techniques 49.2 (Feb. 2001 [T-MTT]): 406-409.

In this paper, we have developed an interpretation of transistor S-parameters by poles and zeros. The results from our proposed method agreed well with experimental data from GaAs FETs and Si MOSFETs. The concept of source-series feedback was employed to analyze a transistor circuit set up for the measurement of the S-parameters. Our method can describe the frequency responses of all transistor S-parameters very easily and the calculated S-parameters are scalable with device sizes. It was also found that the long-puzzled kink phenomenon of S/sub 22/ observed in a Smith chart can be explained by the poles and zeros of S/sub 22/.

❑ Return to main document.