Abstracts

A novel approach to extracting small-signal model parameters of silicon MOSFET's

S. Lee, H.K. Yu, C.S. Kim, J.G. Koo and K.S. Nam. "A novel approach to extracting small-signal model parameters of silicon MOSFET's." 1997 Microwave and Guided Wave Letters 7.3 (Mar. 1997 [MGWL]): 75-77.

We present a simple and accurate method to extract a small-signal equivalent circuit model of Si MOSFET's, based on the novel approach to determining parasitic inductances and resistances by fitting the frequency response of new analytic expressions with Z-parameters. This method is proposed to overcome the serious problem that conventional cold-FET methods cannot be applied for MOSFET's, and is also superior to the traditional optimization of the entire model parameters to fit the measured S-parameters. In particular, this technique is simple and reliable because no additional measurements are needed. The excellent correspondence is achieved between modeled and measured S-parameters from 0.5 to 39.5 GHz.

❑ Return to main document.