Abstracts

Accurate closed-form expressions for the frequency-dependent line parameters of on-chip interconnects on lossy silicon substrate

A. Weisshaar and Hai Lan. "Accurate closed-form expressions for the frequency-dependent line parameters of on-chip interconnects on lossy silicon substrate." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1753-1756 vol.3.

Accurate closed-form expressions for the frequency-dependent R,L,G,C line parameters of microstrip lines on lossy silicon substrate are presented. The closed-form expressions for the frequency-dependent series impedance parameters are obtained using a complex image method. The frequency-dependent shunt admittance parameters are expressed in closed form in terms of the shunt capacitances obtained in the low and high frequency limits. The proposed closed-form solutions are shown to be in good agreement with the electromagnetic solutions.

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