Abstracts

Theoretical and experimental investigation of bias and temperature effects on high resistivity silicon substrates for RF applications

A.C. Reyes, S.M. El-Ghazaly and M. Dydyk. "Theoretical and experimental investigation of bias and temperature effects on high resistivity silicon substrates for RF applications." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 1069-1072.

Theoretical and experimental comparisons show that the RF characteristics of a CPW in Schottky contact with a HR Si substrate are bias independent for all practical temperatures, up to 100/spl deg/C. Bias dependence on the RF characteristics of the transmission line are noticed above 100/spl deg/C when the ohmic dielectric loss of the HR Si becomes the dominant loss mechanism on the coplanar structures under study. This is a direct result of the increase of intrinsic carrier density.

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