Abstracts

Temperature and Bias Effects in High Resistivity Silicon Substrates

A.C. Reyes, S.M. El-Ghazaly, S. Dorn and M. Dydyk. "Temperature and Bias Effects in High Resistivity Silicon Substrates." 1996 MTT-S International Microwave Symposium Digest 96.1 (1996 Vol. I [MWSYM]): 87-90.

The purpose of this paper is to report the results of studies dealing with the impact of temperature and DC bias on low-cost low loss high resistivity (HR) Si substrate. Measured results show that microwave performance of a coplanar transmission lines and a meander inductive structure realized on HR Si are not affected by applied DC bias from -10 V to 10 V in the temperature range from -50 °C to 50 °C. Furthermore, measured results demonstrate that the losses of the structures under study on HR Si are comparable to the losses of similar structures on semi-insulating (SI) GaAs up to 100°C.

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