Abstracts

Transmission line noise from standard and proton-implanted Si

K.T. Chan, A. Chin, C.M. Kwei, D.T. Shien and J. Lin. "Transmission line noise from standard and proton-implanted Si." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 763-766 vol.2.

We have measured the NF/sub min/ of transmission lines on 10/sup 6/ ohm-cm proton implanted Si, Si-on-Quartz, and standard Si with top isolation oxide. Transmission lines on proton implanted Si shows the lowest NF/sub min/ of less than 0.2 dB because of the low substrate loss due to the high resistivity. The proton implantation did not contribute to excess shot noise induced by carrier trapping and de-trapping because of the very small diffusion length to metal line.

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