Abstracts

Understanding and modeling the non-monotonic attenuation behavior of PIN limiter diodes

R.H. Caverly and G. Hiller. "Understanding and modeling the non-monotonic attenuation behavior of PIN limiter diodes." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 849-852.

A commonly observed and unexplained behavior in limiter and switch circuits using PIN diodes is that attenuation may unexpectedly remain constant and even decrease with increasing input power or DC forward bias. This paper demonstrates that this anomalous, non-monotonic behavior is attributed to an interaction of the forward biased PIN diode capacitive reactance with any parasitic inductance in series with the junction. A model based on these principles is presented and verified with experimental microwave performance data that should prove useful to the designer.

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