Abstracts

The Effect of Paracitic Elements on Potential Stability Criteria for Tunnel Diodes (Correspondence)

J. Markowski. "The Effect of Paracitic Elements on Potential Stability Criteria for Tunnel Diodes (Correspondence)." 1968 Transactions on Microwave Theory and Techniques 16.6 (Jun. 1968 [T-MTT]): 374-374.

The idea of tunnel-diode potential stability was first introduced by Smilan and Youla. In their work the conditions for potential stability of the tunnel diode are computed on the basis of an equivalent circuit consisting of 1) negative resistance -R, 2) junction capacitance C/sub d/, 3) series inductance L/sub d/, and 4) junction spreading resistance r. Scanlan and Lim derived the conditions the tunnel-diode potential stability taking into account additionally the package capacitance C/sub s/. They neglected, however, the spreading resistance r. The formula for the stability conditions derived in their paper which gives the dependence between the package capacitance and the series inductance has the form (using Scanlan and Lim's notation) $C(L^2 - 5L + 5) > -5$.

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