Abstracts

Lifetesting GaAs MMICs Under RF Stimulus (Dec. 1992 [T-MTT])

W.J. Roesch, T. Rubalcava and C. Hanson. "Lifetesting GaAs MMICs Under RF Stimulus (Dec. 1992 [T-MTT])." 1992 Transactions on Microwave Theory and Techniques 40.12 (Dec. 1992 [T-MTT] (1992 Symposium Issue)): 2452-2460.

This paper summarizes very high temperature lifetest results on MMIC switches and attenuators designed, assembled and screened by Motorola GEG and manufactured and tested by TriQuint. It was found that individual heating and RF bias resulted in data which indicates the devices degrade linearly with lognormal failure distributions that compare favorably with historical dc lifetesting of MMIC amplifiers. Electrical measurements indicated MESFET gate degradation was occurring, which was confirmed by failure analysis. The failure mechanism was found to be highly accelerated by temperature and is not expected to impede device lifetimes at normal use conditions for thousands of years.

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