Abstracts

Reliability Investigation on S- Band GaAs MMIC

K. Katsukawa, T. Kimura, K. Ueda and T. Noguchi. "Reliability Investigation on S- Band GaAs MMIC." 1987 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 87.1 (1987 [MCS]): 57-61.

Accelerated life tests and radiation hardness tests have been conducted on GaAs MMICs and tie constituent elements. 0.35 to 1.3 x 10/sup 8/ hours MTF (Median Time to Failure) at 130°C Tch were estimated for a wide band amplifier up to S-band. No failure has been observed on RF operation tests for 3000 hours at Tch of 180°C and 205°C values for 12 samples, respectively. No degradation in the electrical performance was observed up to 1 x 10/sup 7/ rad gamma-ray irradiation with 5% criteria for the the S-band two-stage amplifiers, two-modulus prescalers and their FETs. It has been confirmed that the MMICs prcduced, using NEC's 0.8 µm long T-shaped WSi gate FET manufacturing process, are sufficiently reliable for practical applications.

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