Abstracts

Successful Alloy Attachment of GaAs MMIC's

J.S. Pavio. "Successful Alloy Attachment of GaAs MMIC's." 1987 Transactions on Microwave Theory and Techniques 35.12 (Dec. 1987 [T-MTT] (1987 Symposium Issue)): 1507-1511.

Alloy attachment of GaAs monolithic circuits was examined after initial reflow, after environmental bake, and after a stepped series of thermal cycles from 200 to 1000 cycles (-55 to + 125°C). The variety of solders tested included both pastes and preforms. Monolithic assemblies alloyed with these solders were evaluated for changes in physical properties as well as for changes in electrical performance. It was noted during the study that via fractures due to thermal expansion differences between the alloy and the GaAs monolithic device were a common occurrence and could become an inherent reliability risk. Based on this evidence, an investigation relating the frequency of fracturing to the size and the shape of the vias was undertaken. Results led to the development of processing parameters which could minimize and control fracture occurrence.

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