

Abstracts

Excellent Reliability with High Throughput Techniques and Materials for Alloy Attachment

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Although device alloy attachment has received considerable study in recent years due to increasing requirements for high power performance, secondary and tertiary levels of attachment have received scant attention. Yet, their reliability is key to the performance of each microwave module, and critical to the reliability of the solder system as a whole. An evaluation is presented which comprehensively examines alloys which can be utilized for secondary attachment in microwave modules. After reflow, the evaluation cycle encompassed a 168 hour bake operation, thermal cycling and mechanical vibration and shock. The samples were x-rayed, examined visually for wetting anomalies, and microsectioned to analyze intermetallic formation. All alloys tested were reflowed without flux in a reducing atmosphere reflow furnace, a high throughput process clearly amenable to high volume production.

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