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EFFECT OF THERMAL AGING ON THE IMC LAYER BETWEEN SnAgSb SOLDER AND Cu SUBSTRATE

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ABSTRACT

Intermetallic compounds (IMCs) play a great role in solder joint reliability. Intermetallic formation was studied between SnAgSb solder and Cu substrate of a power package device. The integrity of IMC region is vital to the performance and reliability of the semiconductor packages. The solder joint of the as received packages were subjected to the thermal aging test for 50, 100, 200 and 400 hours at 175 ^{o}C. The microstructure evolutions and phases determination of the interfacial region were observed using scanning electron microscope (SEM) equipped with X-ray energy dispersion spectrometry (EDS). Thickness of IMCs layer was digitally measured and it shows the thickness increased with the increasing of the aging time.

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