

Effect of post mold cure ramp down temperature on internal package stress for IC plastic packages.

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This research studied an effect of ramp down temperature to integrated circuit (IC) packages after completed post mold curing in IC packaging process. Post mold cure process is so important to make a completed epoxy molding compound (EMC) due to cross linking to enhance microstructure of compound stiffness. Temperature is a factor effect to EMC base on the coefficient of thermal expansion. The ramp down temperature of post mold curing can change microstructure of compound in term of stress inside the package. In experiment, the ramp down temperatures were varied to check the effect of internal stress due to temperature. The ramp down temperature were varied from 175 C° until room temperature (25 C°) and analyzed the stress inside the packages by reliability testing after take the test samples out from the oven cure. The results showed that for TSSOP package the ramp down temperature at 175 C°, 150 C°, 125 C°, 100 C°, 75 C°, 50 C° and 25 C° to reveal internal stress of the package after completed post mold cure. For SOIC and SOT23 the opposite way, the ramp down temperature of all these temperatures did not reveal stress inside EMC.

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