

Reflow Soldering

Reflow soldering is the most common method of attaching surface mount electronic components to a circuit board. The goal of the reflow process is to melt the solder and heat the conductive surfaces, without overheating or damaging any electrical components. In the conventional reflow soldering process, there are four distinct stages, or zones, having specific thermal profiles: preheat, thermal soak, reflow, and cooling. For high-volume assembly, surface mount components are generally auto-placed by machine.

Reflow Temperature Profile

The single most critical stage in the automated assembly process is the reflow stage. The reflow profile for any given component should be closely followed because excessive temperatures or transport times during reflow can irreparably damage the component. Assembly personnel need to pay careful attention to the oven's profile to ensure that it meets the requirements necessary to successfully reflow all components while still remaining within the limits mandated by components requiring shorter flow periods.

