Almit Lead Free Solder Paste Reflow Curve

Schematic Reflow Curve for Almit Lead Free Solder Pastes

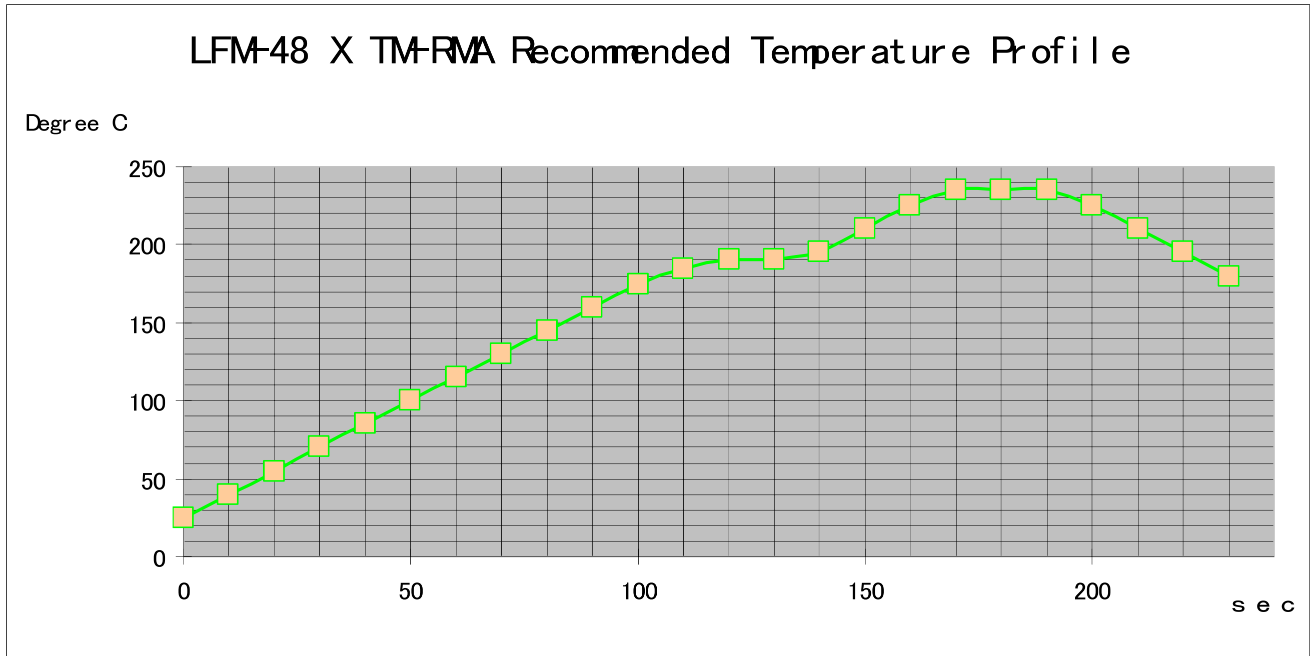

Table Showing Key Temperatures and Times for Almit Lead Free Solder Pastes

	25~160 ºC	160~190 ºC	> 220º C	230~Pk.	Pk. Temp (235ºC)
TARGET TIME (S)	90~130	30~60	20~50	10~15	160~270

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Pre-heating Zone

This stage of the reflow curve gently heats up the pcb/components and solder paste, and begins to activate the fluxes. The thermal gradient should be in the region of 1.5°C/second up to 160°C.

Thermal Stabilisation Zone

This stage of the reflow curve allows all the large and small components on the pcb to reach approximately the same temperature prior to entering the reflow zone thus reducing the temperature difference across the pcb when it is in the hottest part of the oven. Stabilise the pcb with a thermal gradient of approximately 0.5°C/second until the pcb reaches about 190-200°C.

Reflow Zone

This stage of the profile heats the pcb above the melting point of the solder alloy allowing the solder to reflow over the joint area cleaned by the paste flux in the previous 2 zones. The thermal gradient in this zone should be approximately 1.5°C/second until the whole pcb reaches 235°C. Care should be taken to make sure no area of the pcb becomes overheated. Almit specify an absolute maximum temperature on any area of the pcb should not exceed 250°C. This will protect any components which may only be specified up to 255°C. The Almit pastes can actually withstand higher temperatures but there is no benefit in overheating any parts of the pcb. The cooling rate out of the reflow zone should be about 1.5°C.

Almit Technical Assistance

Almit will be happy to advise on oven settings for lead free solder paste trials and are able to offer a free oven profiling service. Please contact the Almit office on 01342 822844.

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