



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
<b>Preheat / Soak</b>		
Temperature Min (T <sub>min</sub> )	100 °C	150 °C
Temperature Max (T <sub>max</sub> )	150 °C	200 °C
Time (t <sub>s</sub> ) from T <sub>min</sub> to T <sub>max</sub>	60 – 120 seconds	60 – 120 seconds
Ramp-up Rate (T <sub>L</sub> to T <sub>p</sub> )	3 °C/second max	3 °C/second max
Liquidous temperature (T <sub>L</sub> )	183 °C	217 °C
Time (t <sub>L</sub> ) maintained above (T <sub>L</sub> )	60 – 150 seconds	60 – 150 seconds
Peak package body temperature (T <sub>p</sub> )	T <sub>p</sub> must not exceed classification temperature listed in table on page 2.	T <sub>p</sub> must not exceed classification temperature listed in table on page 2.
Time (t <sub>p</sub> ) within 5 °C of the specified classification temperature (T <sub>c</sub> )	20 seconds	30 seconds
Ramp-down rate (T <sub>p</sub> to T <sub>L</sub> )	6 °C/second max	6 °C/second max
Time 25 °C to peak temperature	6 minutes max	8 minutes max

**Notes:**

1. All temperatures refer to the center of the package, measured on the package body surface that is facing up during reflow process.
2. Reflow profiles listed in this document are for classification/preconditioning and are not meant to specify board assembly profiles. Actual board assembly profiles should be developed based on specific process needs and board designs and should not exceed parameters in above table.

CLASSIFICATION TEMPERATURE

SnPb Eutectic Process

Package Thickness	Volume mm <sup>3</sup> < 350	Volume mm <sup>3</sup> ≥ 350
< 2.5mm	235 °C	220 °C
≥ 2.5mm	220 °C	220 °C

SnPb Eutectic Process

Package Thickness	Volume mm <sup>3</sup> < 350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> ≥ 2000
< 1.6mm	260 °C	260 °C	260 °C
1.6mm - 2.5mm	260 °C	250 °C	245 °C
≥ 2.5mm	250 °C	245 °C	245 °C

Notes:

1. Package “volume” excludes external terminals (e.g., balls, bumps, lands, leads) and/or non-integral heat sinks. Package volume includes the external dimension of the package body, regardless if it has a cavity or is a passive package style.
2. The maximum component temperature reached during reflow depends on package thickness and volume. The use of convection reflow processes reduces the thermal gradients between packages. However, thermal gradients due to differences in the thermal mass of SMD packages may still exist.

REVISION HISTORY

Date	Revision	Notes
December 10, 2020	1	Initial release
August 6, 2024	2	Changed to Mercury branding. No content changes.

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