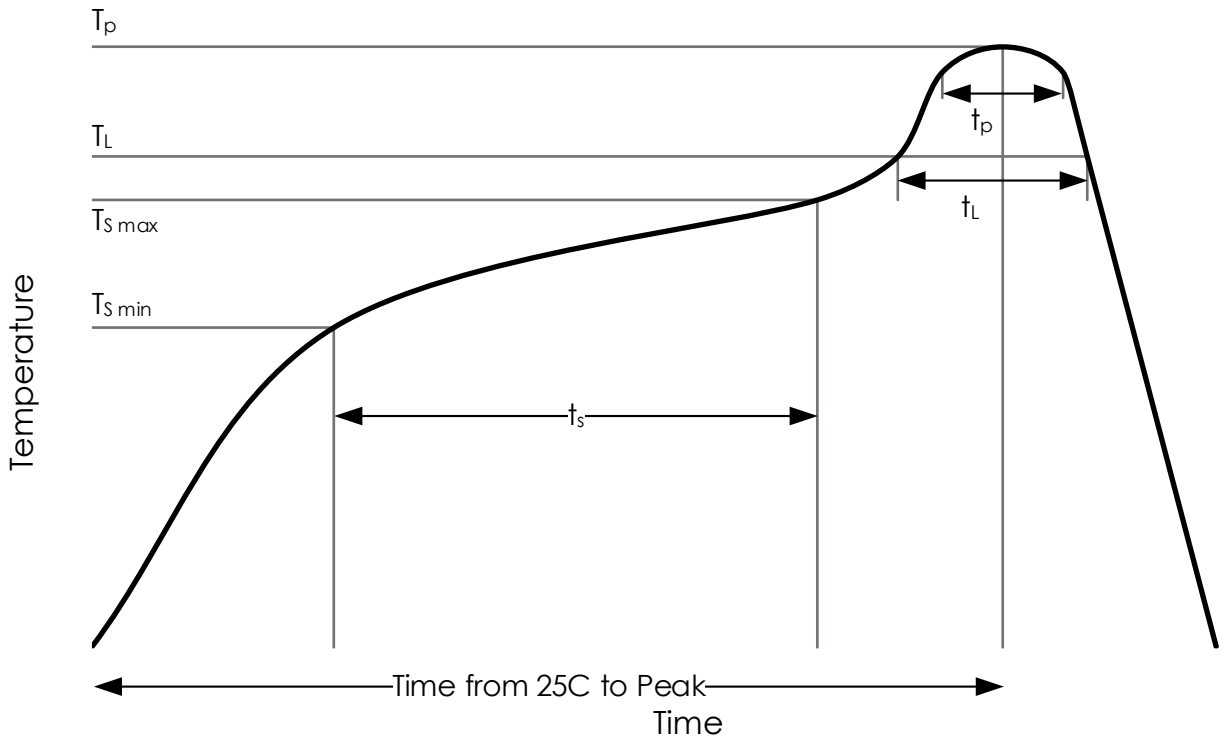
Solder Reflow Profile

Per IPC/JEDEC J-STD-20E



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from T_{smin} to T_{smax}	 100 °C 150 °C 60 – 120 seconds	 150 °C 200 °C 60 – 120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max	3 °C/second max
Liquidous temperature (T_L) Time (t_L) maintained above (T_L)	183 °C 60 – 150 seconds	217 °C 60 – 150 seconds
Peak package body temperature (T_p)	T_p must not exceed classification temperature listed in table on Page 2.	T_p must not exceed classification temperature listed in table on Page 2.
Time (t_p) within 5 °C of the specified classification temperature (T_c)	20 seconds	30 seconds
Ramp-down rate (T_p to T_L)	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.

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Classification Temperature – SnPb Eutectic Process

Package Thickness	Volume mm³ < 350	Volume mm³ ≥ 350
< 2.5mm	235 °C	220 °C
≥ 2.5mm	220 °C	220 °C

Classification Temperature – Pb-Free Process

Package Thickness	Volume mm³ < 350	Volume mm³ 350 - 2000	Volume mm³ ≥ 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 Number	Notes
December 10, 2020	1	Initial Release