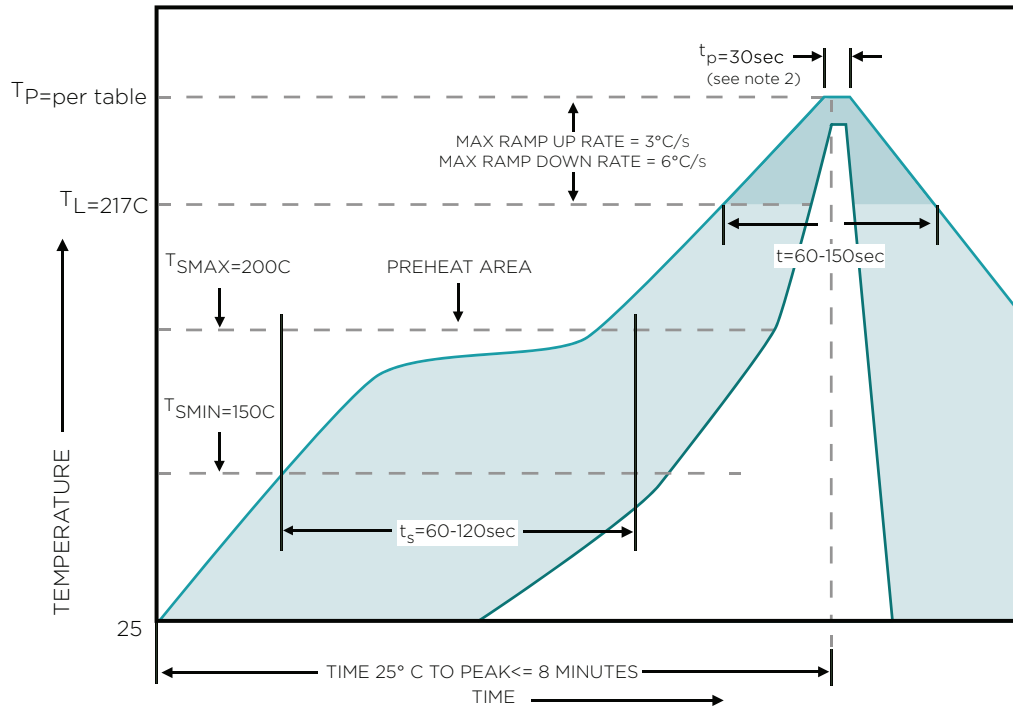


# SOLDER REFLOW

## PULSE RECOMMENDED SOLDER REFLOW PROFILE IR/CONVENTION REFLOW PROFILE (IPC/JEDEC J-STD-020E)



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

**Note 1:** All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow (e.g., live-bug). If parts are reflowed in other than the normal live bug assembly reflow orientation (i.e., dead-bug),  $T_p$  shall be within  $\pm 2^\circ\text{C}$  of the live bug  $T_p$  and still meet the  $T_c$  requirements, otherwise, the profile shall be adjusted to achieve the latter. To accurately measure actual peak package body temperatures, refer to JEP140 for recommended thermocouple use.

**Note 2:** Reflow profiles 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 the parameters in this table. For example, if  $T_c$  is  $260^\circ\text{C}$  and time  $T_p$  is 30 seconds, this means the following for the supplier and the user:

For a supplier: The peak temperature must be at least  $260^\circ\text{C}$ . The time above  $255^\circ\text{C}$  must be at least 30 seconds.

For a user: The peak temperature must not exceed  $260^\circ\text{C}$ . The time above  $255^\circ\text{C}$  must not exceed 30 seconds.

**Note 3:** Package "volume" excludes external terminals (e.g., balls, bumps, lands, leads) and/or non-integral heat sinks. Package volume includes the external dimensions of the package body, regardless if it has a cavity or is a passive package style.

**Note 4:** At the discretion of the device manufacturer, but not the board assembler/user, the maximum peak package body temperature ( $T_p$ ) can exceed the values specified in table 4-1 or 4-2. The use of a higher  $T_p$  does not change the classification temperature ( $T_c$ ).

**Note 5:** 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 thermal mass of SMD packages may still exist.