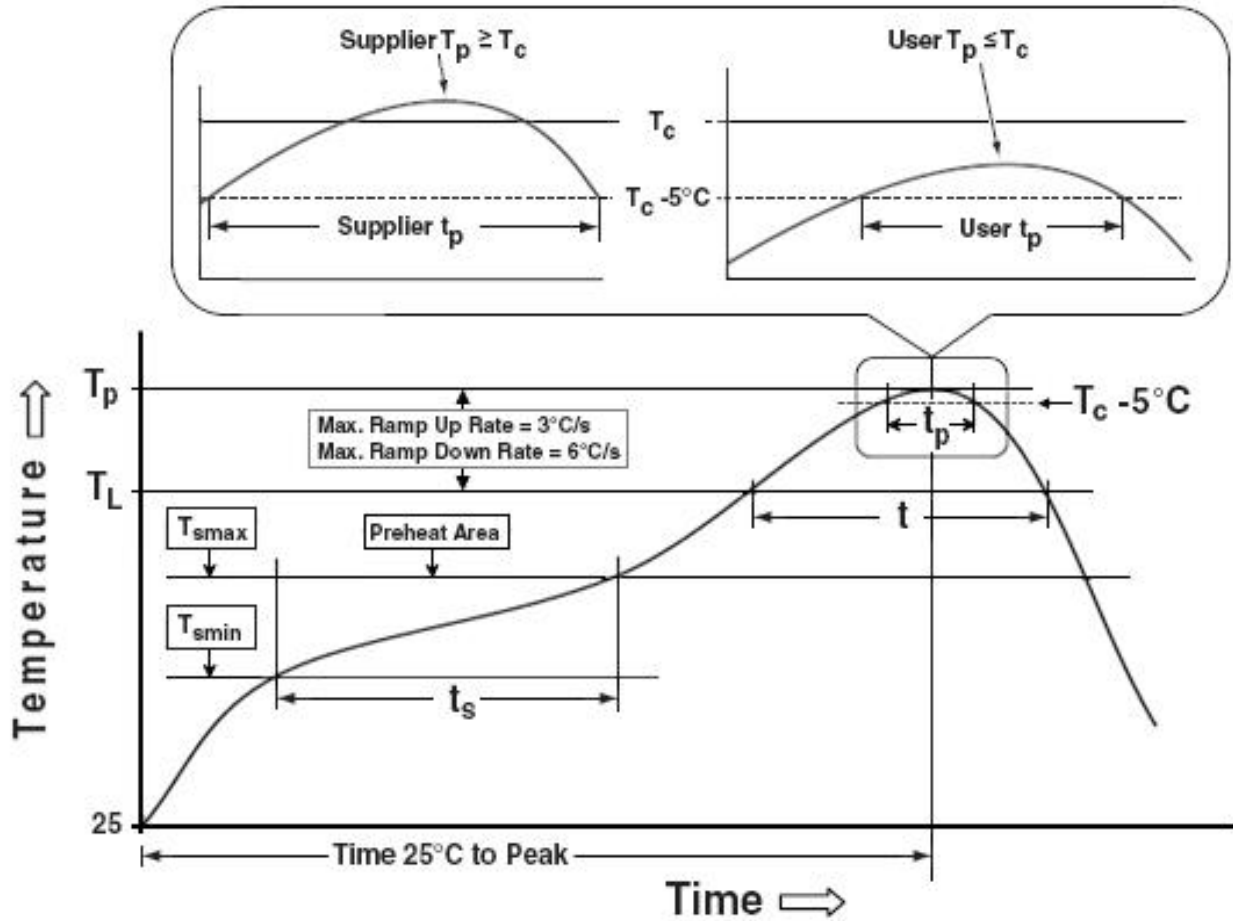




## Soldering Note For SMD

### (1) Recommended Pb-Free Solder Heating Profiles



Profile Feature	Pb-Free Assembly
Preheat / Soak	
Temperature Min (T <sub>smin</sub> )	150 °C
Temperature Max (T <sub>smax</sub> )	200 °C
Time (t <sub>s</sub> ) from t <sub>smin</sub> to t <sub>smax</sub>	60 -120 seconds
Ramp-Up Rate(T <sub>L</sub> to T <sub>p</sub> )	3° C / second max.
Liquidous Temperature (T <sub>L</sub> )	217 °C
Time (t <sub>L</sub> ) maintained above T <sub>L</sub>	60 -150 seconds
Peak package body Temperature (T <sub>p</sub> ) <sup>a)</sup>	260 °C
Time within 5 °C of actual Peak Temperature (t <sub>p</sub> )	30 seconds
Ramp-Down Rate	6 °C / second max
Time 25 °C to Peak Temperature	8 minutes max.

Notes

- a) T<sub>p</sub> is defined as a supplier minimum and a user maximum, see also J-STD-020E Table 5-2.
- b) T<sub>c</sub> is Classification Temperatures, see also J-STD-020E Table 4-2.
- c) References J-STD-020E, "Moisture/Reflow Sensitivity Classification for Nonhermetic Surface Mount Devices "