Soldering Instructions

1. SMD component: Reflow Profile (Recommend)

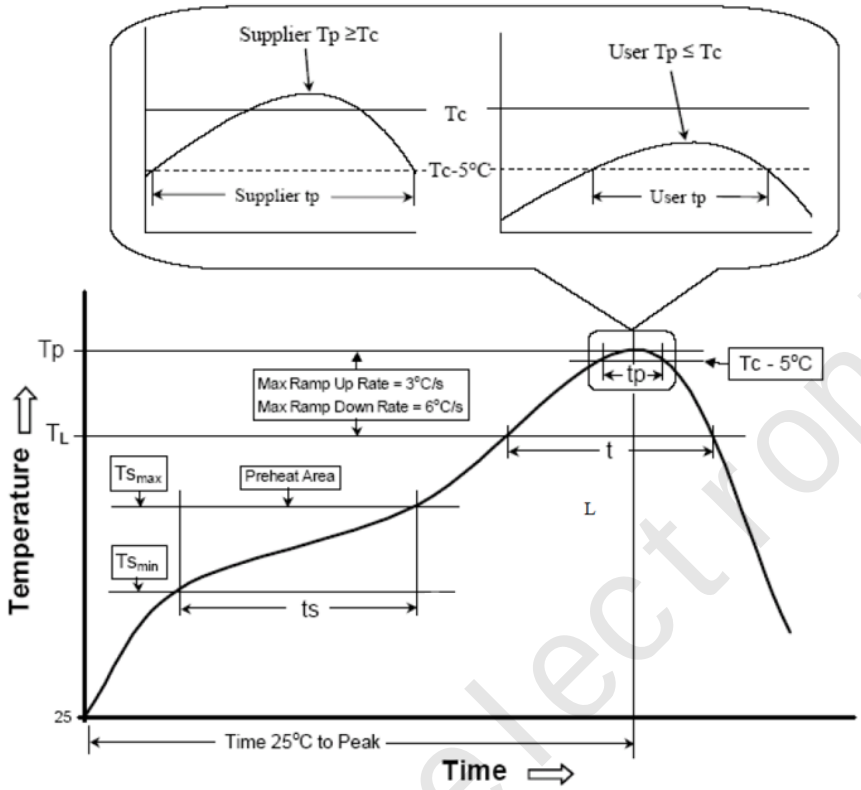


Figure 1 — Classification Profile (Not to scale)

Classification Profiles:

Profile Feature	Eutectic Assembly (SnPb)	Pb-free Assembly (SAC Alloy)
Preheat & Soak ● Temperature min(Tsmin) ● Temperature max(Tsmax) ● Time(Tsmin to Tsmax)(ts)	100℃ 150℃ 60-120 seconds	150℃ 200℃ 60-120 seconds
Ramp-up rate(TL to TP)	3℃/second max.	3℃/second max.
Time 25°C to Peak temperature	6 minutes max.	8 minutes max.
● Liquidus temperature (TL) ● Time maintained above Liquidus temperature(tL)	183℃ 60-150 seconds	217℃ 60-150 seconds
Peak package body Temperature (TP)	TP shall not exceed Tc in Table 1	TP shall not exceed Tc in Table 2
Time (tp) within 5°C of the specified（Tc）（see Figure1）	20 seconds	30 seconds
Ramp-down Rate (TP to TL)	6℃/second max.	6℃/second max.
NOTE: Peak package temperature is defined as a supplier minimum and a user maximum.		

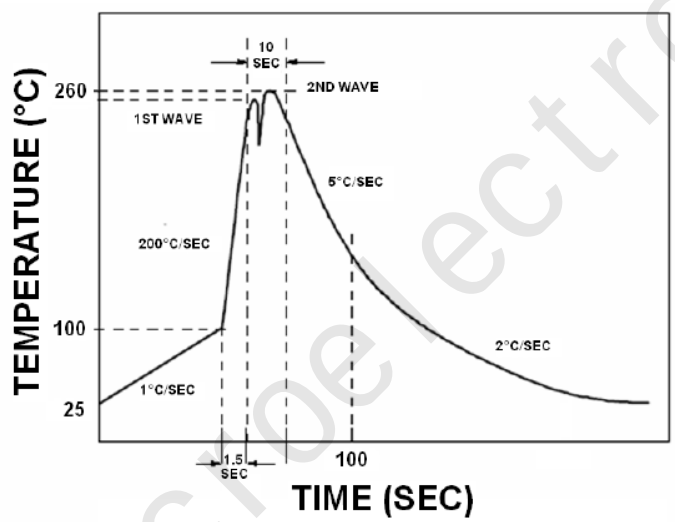
Table 1 — SnPb Eutectic Process - Classification Temperatures (Tc)

Package Thickness	Volume mm3 < 350	Volume mm3 ≥350
< 2.5 mm	235℃	220℃
≥2.5 mm	220℃	220℃

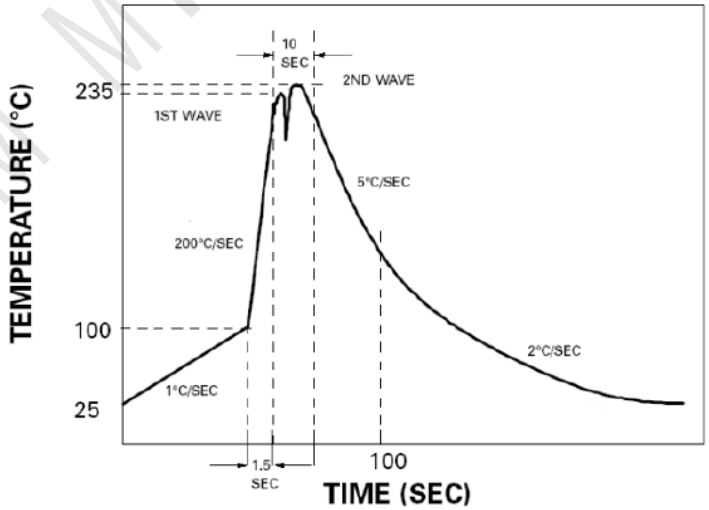
Table 2 — Pb-free (SAC Alloys) Process - Classification Temperatures (Tc)

Package Thickness	Volume mm3 < 350	Volume mm3 350 - 2000	Volume mm3 >2000
< 1.6 mm	260°C	260°C	260°C
1.6 mm - 2.5 mm	260°C	250°C	245°C
> 2.5 mm	250°C	245°C	245°C

2. DIP component: Wave Soldering Profile (Recommend)



The recommended solder profile for devices with Pb-free terminal plating where a Pb-free solder is used.



The recommended solder profile for devices with Pb-free terminal plating used with leaded solder, or for devices with leaded terminal plating used with a leaded solder.

Wave profiles in tabular form

Profile Feature	Sn-Pb System	Pb-Free System
Average Ramp-Up Rate	~200°C/second	~200°C/second
Heating rate during preheat	Typical 1-2, max 4°/sec	Typical 1-2, max 4°/sec
Final preheat temperature	Within 125°C of solder temp.	Within 125°C of solder temp.
Peak Temperature	235°C	260°C
Time within +0 -5°C of actual Peak	10 seconds	10 seconds
Ramp-Down Rate	5°C/second max.	5°C/second max.

3. Manual soldering：

1) Manual soldering should only be applied for workbench circuits design & repair;
2) Solder wire with flux core is required;
3) The power rating of solder iron should be lower than 80W;
4) Ensure that the solder iron's temperature and time setting are within the specifications; Examples are given below:< 260℃+ 5℃at the maximum of 10s or < 350℃+10℃ at the maximum of 3s;
5) Position: at least 2mm away from the plastic body of the device;
6) When soldering, the soldering iron tip should be contacting to the lead.