

# RoHS Compliant Solder Reflow Profile - SMD Trimpot® Products



Process Description	Materials	Temperature	Time Interval
1. Apply solder paste to test board (8 - 10 mil thick)	• Sn 96.5 / Ag 3.0 / Cu 0.5 Alloy water soluble or no clean solder paste (see note 1)	Room temperature	
2. Place test units onto board			
3. Ramp up	Convection oven	(see note 2)	2.5 °C ± 0.5 °/sec.
4. Preheat (T <sub>S</sub> )		150 °C to 190 °C	90 ± 30 sec.
5. Time above liquidus (T <sub>L</sub> )		220 °C	60-90 sec.
6. Peak temperature (T <sub>P</sub> )			250 °C +0 °/-5 ° 10-20 sec. within 5 °C of peak
7. Ramp down		Room temperature (see note 2)	3 °C ± 0.5 °C/sec.
8. Cleaning water clean profile	High pressure deionized water 60 PSI max.	72 °F to 160 °F (22 °C to 71 °C)	As required

Inspect solder joint to determine if solder joint is acceptable (i.e. exhibits wetting of joint's surface). Use the following criteria (ref. acceptability of printed board assemblies, IPC-A-610):

- A) Acceptable (see Figure 1)
- (1) The solder connection wetting angle (solder to component and solder to PCB termination) does not exceed 90 °.
  - (2) Solder balls that do not violate minimum electrical clearances and are attached (soldered) to a metal surface.
- B) Unacceptable (see Figure 2)
- (1) Solder connection wetting angle exceeding 90 °.
  - (2) Incomplete reflow of solder paste.
  - (3) Dewetting.

If unacceptable, determine cause and correct prior to next run.

### NOTES:

1. Parts are not hermetically sealed. The seal is to withstand temporary exposure to board processing.
2. Recommended to be cooled to room temperature prior to board wash but must be below 40 °C. Refer to ref. temperature profile. Temperature at lead/pad junction with "K" type thermocouple.
3. Units that are board mounted for environmental testing must see a peak temperature in the reflow zone, as specified. This is to ensure that all test units will see "worst case conditions".
4. Ramp down rate to be measured from 250 °C to room temperature.
5. Process Description 8 does not apply to open frame trimmers.
6. Allow 3-6 inches minimum distance between the nozzle head and the device.
7. It is recommended that all Trimpot® products undergo only one pass/reflow.

### Temperature of Lead/Pad Junction

(Derived using 6-zone Convection Oven)

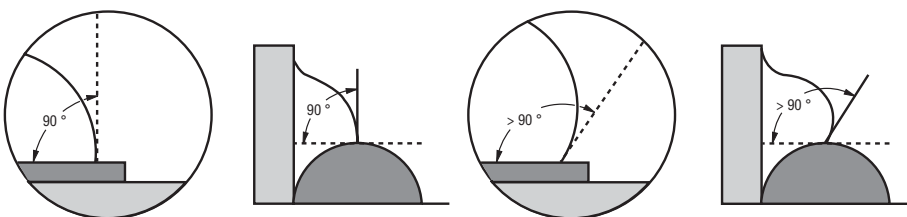
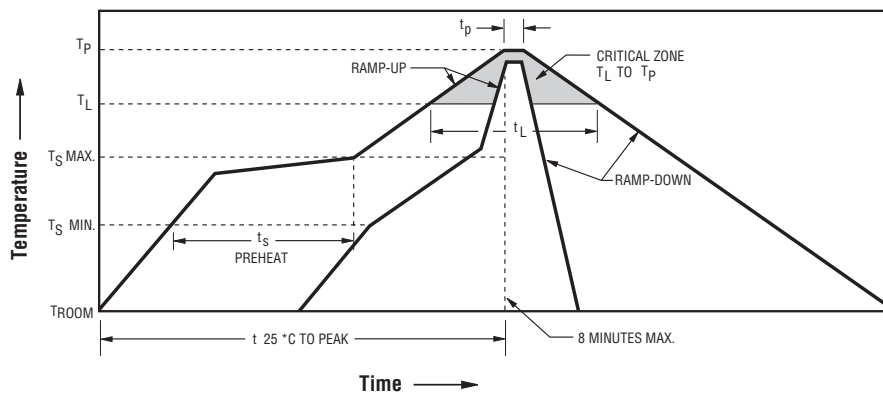


FIGURE 1 - ACCEPTABLE  
90 ° or < 90 °

FIGURE 2 - UNACCEPTABLE  
> 90 °