	Application Note VCO Recommended Assembly Process ROHS Compliant (-G)	AN-011 Revision 00
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1 Objective

This document describes the part assembly critical requirements for VCO and Synthesizer manufactured by Universal Microwave Corporation.

2 Scope

This document applies only to ROHS compliant products (suffix -G at the end of product part number).

3 Requirements

3.1 Part soldering

- UMC recommends using an automated soldering profile to assemble the VCO on a board.
- The maximum reflow temperature shall not exceed the Convective Reflow process as per JEDEC J-STD-20B Lead Free profile (see figure 1 and table 1).
- The part shall not be exposed to a reflow profile more than 3 times.
- When submitted to a reflow profile, the part shall be oriented with the Lid on the top.

Table 1: Recommended Reflow Profile Parameters

Profile Feature	Recommended Parameters
Average Ramp-Up Rate (T _{smax} to T _p)	3° C/second max.
<u>Preheat</u>	
Temperature Min (T _{smin})	150 °C
Temperature Max (T _{smax})	200 °C
Time (t _{smin} to t _{smax})	60-180 seconds
<u>Time maintained above</u>	
Temperature (T _L)	217 °C
Time (t _L)	60-150 seconds
Peak Temperature (T _p)	260 °C
Time within 5 °C of actual Peak Temperature (t _p)	20-40 seconds
Ramp-Down Rate	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

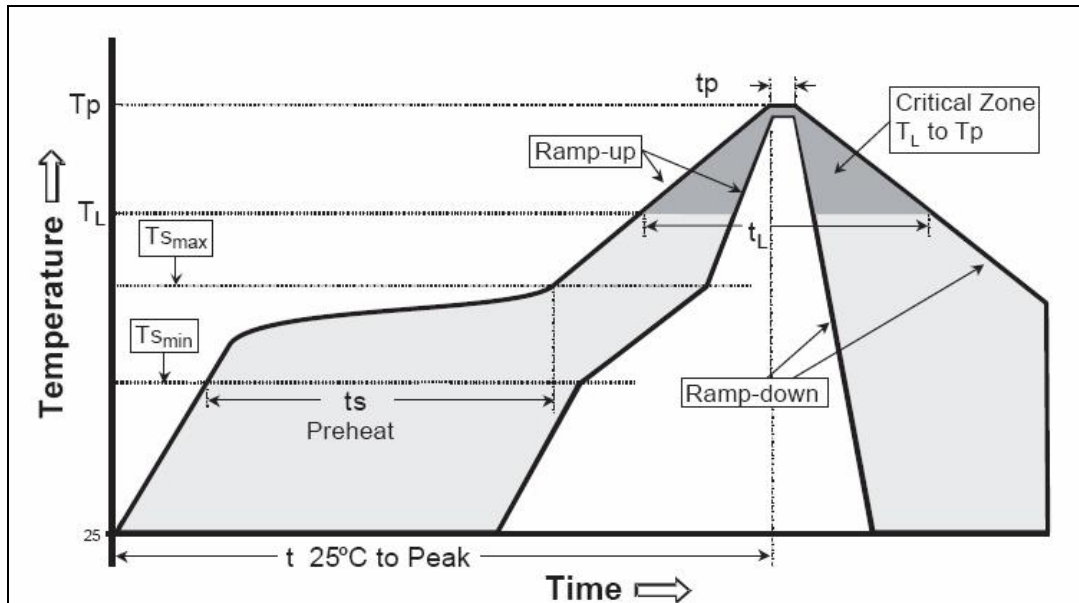


Figure 1: Recommended Reflow Profile

3.2 Part cleanliness

- Part cleanliness is critical to meet specified performance. After assembly, the part shall be free of flux and/or any other source of contamination.
- UMC recommends integrating a cleaning process as part of the assembly process.

Qualified cleaning process:

Disclaimer: The customer shall assess if recommended cleaning process is suitable for its assembly.

- Full immersion in a saponifier bath (Alconox Detergent 8) @ 50°C for 10 minutes.
- Full immersion in a water bath at room temperature for 1 minute.
- Full immersion in denatured alcohol bath @ 50°C for 3 minute.
- Dry component at 85°C for 5 minutes.