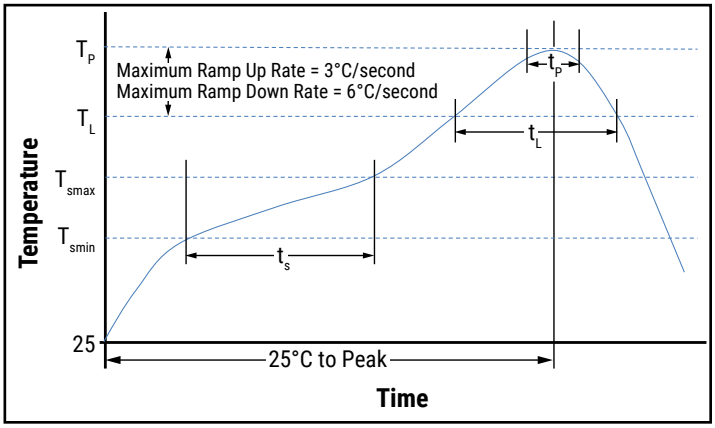
Soldering Process

KEMET's families of surface mount tantalum capacitors are compatible with wave (single or dual), convection, IR, or vapor phase reflow techniques. Preheating of these components is recommended to avoid extreme thermal stress. KEMET's recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J–STD–020D standard for moisture sensitivity testing. The devices can safely withstand a maximum of three reflow passes at these conditions.

Hand soldering should be performed with care due to the difficulty in process control. If performed, care should be taken to avoid contact of the soldering iron to the molded case. The iron should be used to heat the solder pad, applying solder between the pad and the termination, until reflow occurs. Once reflow occurs, the iron should be removed immediately. "Wiping" the edges of a chip and heating the top surface is not recommended.

Profile Feature	SnPb Assembly
Preheat/Soak	
Temperature minimum (T_{Smin})	100°C
Temperature maximum (T_{Smax})	150°C
Time (t_s) from T_{smin} to T_{smax}	60 – 120 seconds
Ramp-up rate (T_L to T_P)	3°C/seconds maximum
Liquidous temperature (T_L)	183°C
Time above liquidous (t_L)	60 – 150 seconds
Peak temperature (T_P)	220°C
Time within 5°C of maximum peak temperature (t_P)	20 seconds maximum
Ramp-down rate (T_P to T_L)	6°C/seconds maximum
Time 25°C to peak temperature	6 minutes maximum

Note 1: All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow.



Storage

All KO-Cap series are shipped in moisture barrier bags (MBBs) with desiccant and humidity indicator card (HIC). These parts are classified as MSL3 (Moisture Sensitivity Level 3) per IPC/JEDEC J–STD–020 and packaged per IPC/JEDEC J–STD–033 MSL3 specifies a floor time of 168H at 30°C maximum temperature and 60% relative humidity. Unused capacitors should be sealed in a MBB with fresh desiccant.

Calculated shelf life in sealed bag:
- 12 months from bag seal date in a storage environment of < 40°C and humidity < 90% RH
- 24 months from bag seal date in a storage environment of < 30°C and humidity < 70% RH

If baking is required, refer to IPC/JEDEC J–STD–033 for bake procedure.