Pb-free reflow profile requirement for solderability testing   **Oct./2006**

The reflow profile defined in this section describes expected minimum reflow profile on UMEC's SMD Magnetic Components. Components have to have adequate wetting and reliable solder joints have to be formed when soldered with this profile that base on Pb-free(SnAgCu) process. Temperature is measured on pin of component.

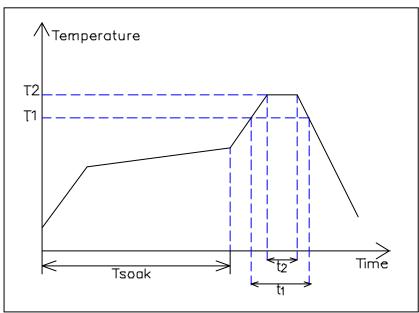| Pb-free reflow profile requirements for solderability testing		
Parameter Specification	Reference	Specification
Average temperature gradient in preheating		3°C/s max.
Soak time	T_{soak}	2-3 minutes
Time above 217°C (T_1)	t_1	Max 30 seconds
Peak temperature in reflow	T_2	230°C (−0/+5°C)
Time at peak temperature	t_2	10 seconds
Temperature gradient in cooling		6°C/second max.

Figure 1. Reflow profile for solderability testing

Reflow soldering profile for soldering heat resistance testing (IPC/JEDEC J-STD-020C)

The reflow profile specified in this section describes expected maximum heat exposure of components during the reflow process of UMEC SMD Magnetic Components.

Temperature is measured on top of component.

All components have to tolerate at least this profile two times (2x) without affecting electrical performance, mechanical performance or reliability.

Pb-free reflow profile requirements for soldering heat resistance			
Parameter	**Reference**	**Specification**	
		Large Body Thickness$\geq$2.5mm and Volume$\geq$350mm^3	**Small Body** Thickness $\geq$2.5mm and Volume <350mm^3
Temperature gradient in preheating		3°C/s max.	
Soak time 150°C- 200°C	T_{soak}	60 -180 seconds	
Time above 217°C (T_1)	t_1	60 - 150 seconds	
Time within 5°C of actual peak	t_3	20 -40 seconds	
Peak temperature in reflow	T_{peak}	245°C (+0/–5°C)	250°C (+0/–5°C)
Temperature gradient in cooling		6°C/second max	
Time 25 °C to Peak Temperature		8 minutes max.	

Note: The table is defined by UMEC's SMD magnetic components range, for the peak solder temperature rating of other components body, please refer to table 5-2 in IPC/JEDEC J-STD-020C
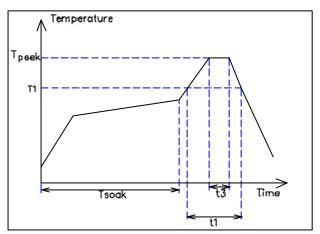

Figure 2. Reflow profile for soldering heat resistance testing

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