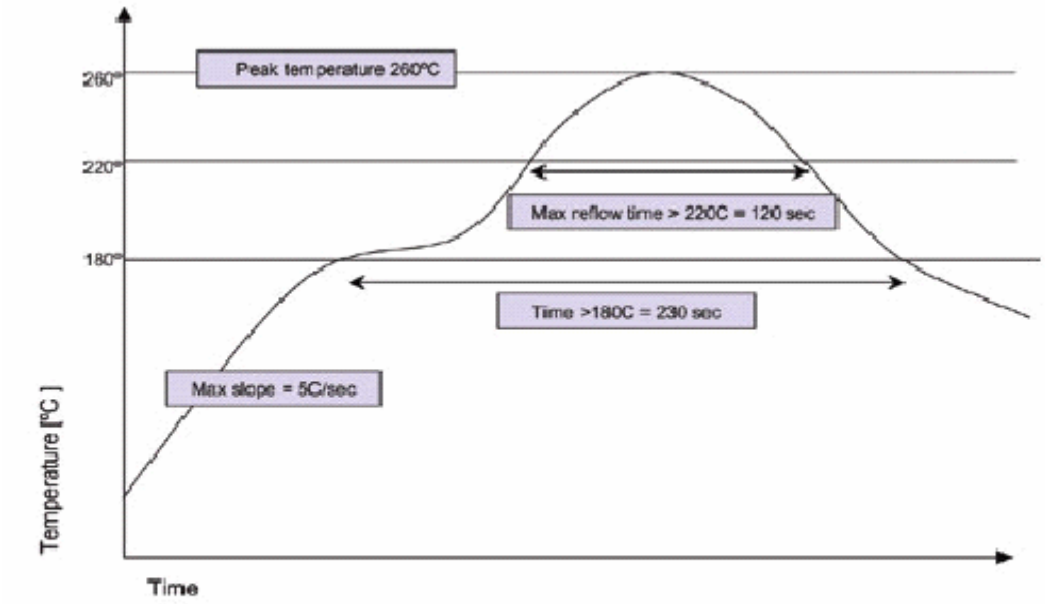
Lead Free Solderability

Anaren's lead-free product line will readily solder with most common lead free reflow profiles and solder paste combinations. However, lead free finishes, in general, provide a narrower process window than tin-lead plated parts and must be taken into consideration when selecting the product finish and solder/ flux combination.



High Temperature Solder Reflow Thermal Profile

For optimal soldering performance, we recommend a high temperature solder reflow profile be used for lead-free parts. While some success can be achieved with lower temperature profiles, such as those peaking at 230C, these lower temperature profiles generally require more active fluxes to achieve the same level of solderability.

We have conducted several studies comparing the performance of a variety of surface finishes and we have found that in general lead-free parts take longer to wet than their tin-lead equivalents. Below are some wetting balance curves that depict typical solder wetting times with different combinations of soldering temperature and flux. As you can see higher processing temperatures and/or the use of more aggressive fluxes can improve the wetting performance of lead-free samples.

Customers who are using traditional tin-lead solder profiles and tin-lead solder pastes with low activity rosin based fluxes should consider using the tin-lead plated version, if available, in these applications.