EPSMA releases lead-free soldering guidelines

Lead-free solder has almost entirely replaced leaded solder in today's electronics due to the Reduction of Hazardous Substances - RoHS requirements. The resulting change of the soldering processes with associated higher soldering temperatures has gradually been accepted by and implemented in the industry during the last decade (2001 - 2010).

The introduction of lead-free soldering has however introduced a number of new issues which have the potential to influence reliability characteristics in a previously reasonably well understood product area. There are still major concerns regarding lead-free soldering and these new issues arising from the use of different materials manufacturing and assembly processes.

The reliability characteristics of concern include Moisture Sensitive Levels (MSL), Electro-migration in solder joints, Tin Whiskers, Dendrites, Conductive Anodic Filaments (CAF) and how metallization on terminals are affecting reliability.

To raise awareness of these not so commonly understood areas, the European Power Supply Manufacturers Association (EPSMA), has published a paper which examines these reliability characteristics in detail and importantly provides recommendations to minimize, and where possible, avoid any degradation of reliability. The paper is invaluable with its collation of these issues in one document. It includes an extensive reference section which exemplifies the diversity of sources used.

This 24 page paper was assembled by a team of authorities from power supply and semiconductor manufacturer representatives within the EPSMA.

The paper was written for members of EPSMA and is also available now for purchase by non-members.