Plastic Isolation Products

Frequently Asked Questions

1. **What is the definition of "leadfree"?**
   JEDEC (Per JEDEC Standard No.97, MAY 2004) defines electronic products as "Pb-free" when the Lead (Pb) level in any of the raw material and the end product is less than or equal to 0.1% by weight of homogeneous material and also meets Pb-free requirements/ definition adopted by RoHS Directive 2002/95/EC.

2. **What is the industry's choice of Pb-free finishes?**
   NEMI (National Electronics Manufacturing Initiatives, Inc of USA) recommends Sn-Ag-Cu for board assembly. Currently, there is no common world solder standard recommendation. Pure tin (matte) is most widely accepted as the alternative for terminal plating.

3. **Why did Avago Technologies choose pure tin (Sn) in spite of concerns regarding whisker growth?**
   Firstly, pure tin (Sn) is compatible with the existing SnPb assembly process. Furthermore, with current development of low stress matte tin-plating chemistry, quality and reliability has been proven to be satisfactory. In fact, we have not encountered any case of whisker growth in out tests so far.

4. **Is "Pb-free" package compatible with SnPb solder?**
   Depending on the setting of the solder plating reflow profile used, Pb-free optocouplers could be backward compatible with SnPb soldering. As the melting point of pure tin is much higher than that of SnPb solder paste, it is recommended that customers make appropriate/relevant adjustments to the reflow process temperature profile to ensure optimum results.

5. **What if I need product with SnPb leads that must be able to withstand higher temperatures than existing SnPb paste products?**
   All existing lead-based products can withstand higher soldering temperature (240/260°C) required for Pbfree solder paste. If the peak temperature specified on a product does not meet your needs, please contact your local sales representative.

6. **How many solder reflow cycles could Avago Technologies Pb-free optocoupler withstand ?**
   Avago Technologies Pb-free optocouplers could withstand a maximum of 3 cycles of solder reflow (as per J-020-C).

7. **What are the risks associated with reduction or elimination of lead?**
   There are significant potential risks such as product reliability, increased manufacturing yield losses and environmental and health concerns associated with lead alternatives. Extensive qualifications are or will be done to ensure quality and reliability of Avago Technologies Pb-free packages for Isolation Products. Today, no complications have been identified that would thwart the transition to Pb-free products.

8. **Will Pb-free package cost more than existing packages?**
   There is no plan at the moment to introduce any cost increment.

9. **Is Avago Technologies currently shipping any lead-free optoisolation components?**
   Yes, we are currently shipping Pb-free optocouplers to customers, and have been doing so since Nov 1, 2003.

10. **What should I do if I need a lead-free product from Avago Technologies that is not commercially available yet?**
    Please submit your request through your Avago Technologies Field Sales Engineer or Contact Center. Please provide your production and sampling schedule, as well as quantity estimates.

11. **Where can I get more information?**
    - Avago Technologies' Isolation Product Division - www.avagotech.com
    - JEITA - tsc.jeita.or.jp/TSC/indexE.htm
    - IPC - www.ipc.org
    - SOLDERTEC - www.lead-free.org
    - iNEMI - www.inemi.org/cms
    - NIST - www.nist.gov

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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