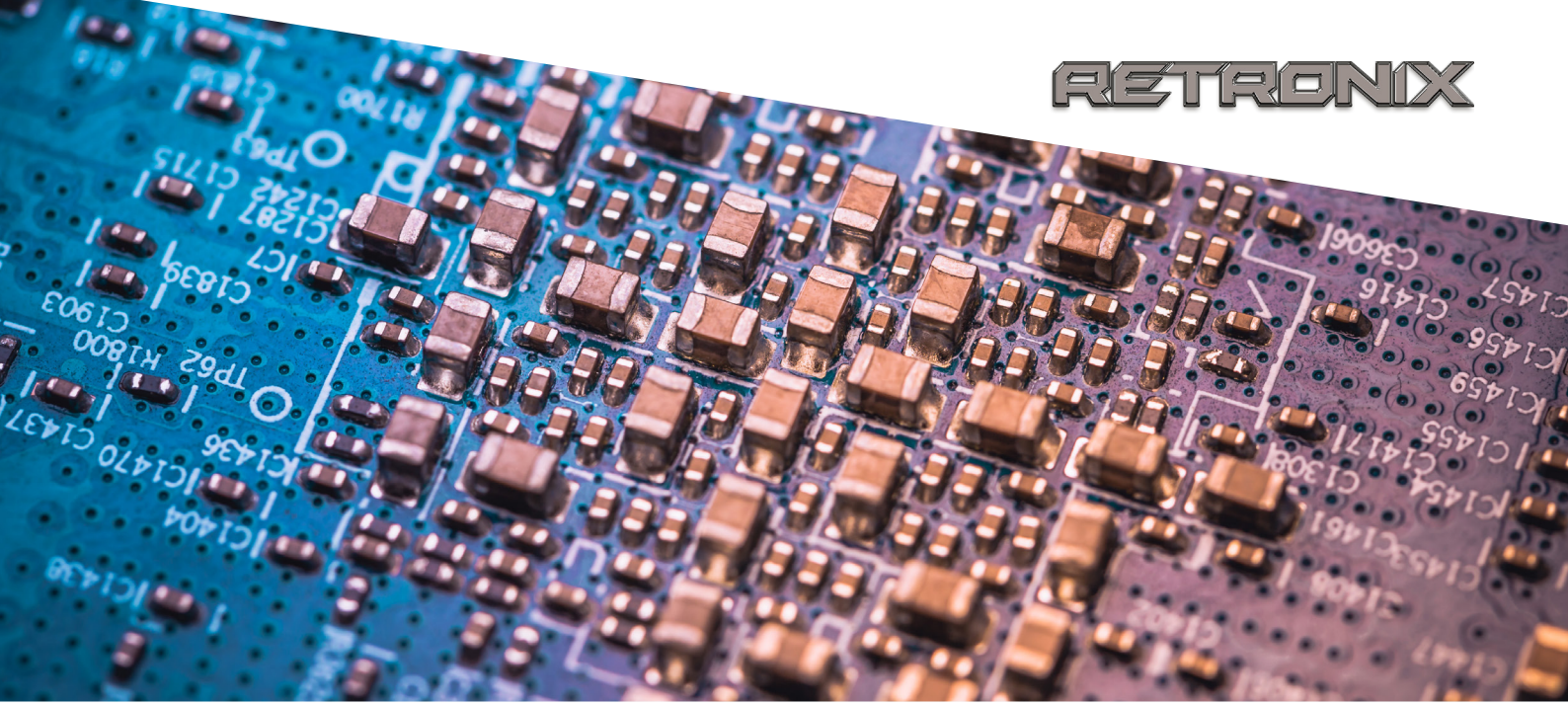

MICRO DEVICE HOT SOLDER DIP

A Retronix Process Innovation | Patent Pending

It's a well-known fact that Tin Whisker filaments can grow uncontrollably from tin plating. The danger comes when one of these filaments peels off the tin and connects with an adjacent component causing a short.

With rapid advancements in technology and the miniaturisation of electronic devices, the distance between component terminals is dropping to as a few as 100 um, a gap small enough for tin whiskers to reach. Tin Whiskers pose a serious risk for long life and high reliability applications, including, space, aviation, and implantable medical devices.

EXCLUSIVE TO **RETRONIX**

TIN WHISKER MITIGATION

ALLOY CONVERSION

ALLOY REFRESH

TIN WHISKER MITIGATION

The threat posed by Tin Whiskers has previously been solved by adding a small percentage of lead (Pb) during Sn electroplating however, with the onset of the RoHS directive, the issue has resurfaced.

Since the ban on Pb, manufacturers of High Reliability electronics have been working on many different strategies to prevent tin whiskers, with varying levels of success. A company will insist on 100% eutectic solder, whereas others will enlist alternative solutions, most popularly using solder paste on unleaded components for self-mitigation. Self -mitigation is very dependent on the manufacturing process and assumes that some level of risk must be accepted. In the High Reliability world there is no room for error.

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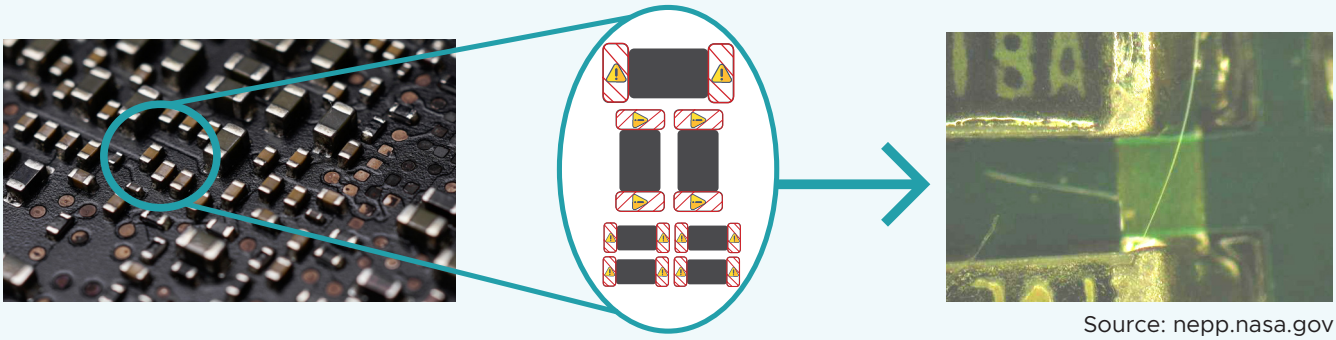
SOLDER PASTE FAILINGS

Lead solder from the paste only covers the sides of the termination but does not reach the top surface. As widely reported by NASA, this process does not protect against tin whiskers.



Source: nepp.nasa.gov

THE RETRONIX SOLUTION

With the automated process designed exclusively by Retronix (Patent Pending) for tinning micro components including 0402s, 0603s & SOTs to GEIA Standard, the industry finally has an all-inclusive solution for tinning requirements.

- The automated micro tinning process is carried out on our approved plating systems.
- The lead-free components are picked up by a specially designed tool that can hold multiple devices at a time.
- The components are moved to the fluxing station and then accurately over the solder wave. The automated system ensures the dip is precise and consistent.
- Lead solder covers all sides of capacitor terminations.

In many cases, the approach to mirco device tinning has been, “No suitable process that meets GEIA Standard exists therefore, it’s not a problem we can fix.” Or companies work around the issue which is not ideal.

Now the Retronix Micro Device | Hot Solder Dip process offers an automated solution to tin/solder even the smallest and most challenging of components to GEIA standard.

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