

CHIP CAP TINNING SERVICE

It's a well-known fact that Tin Whisker filaments can grow from pure tin plating. The danger comes when one of these filaments 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 getting smaller, increasing the danger from Tin Whiskers. Tin Whiskers pose a serious threat to high reliability applications, including, space, aviation, and implantable medical devices.

TIN WHISKER MITIGATION

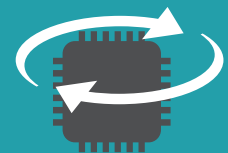
The threat posed by Tin Whiskers can be solved by using tin/lead solder, however with the onset of the RoHS directive, the issue has resurfaced.

New components are sold only in lead-free form & therefore must be converted to tin/lead, a process that has to conform to GEIA Standard. The problem is that smaller components such as e.g. 0402 & 0603 chip caps/resistors could not (until now) be handled in an automated process. Hand-dipping has been the only conversion method, which is costly, time-consuming, does not meet GEIA Standards & has more potential for inconsistent application. Many manufacturers are rejecting hand dipping & instead are assembling PCBs with tin/lead paste, on the understanding that the paste, when reflowed, will convert the lead free ends to tin lead.

EXCLUSIVE TO
RETRONIX



TIN WHISKER
MITIGATION



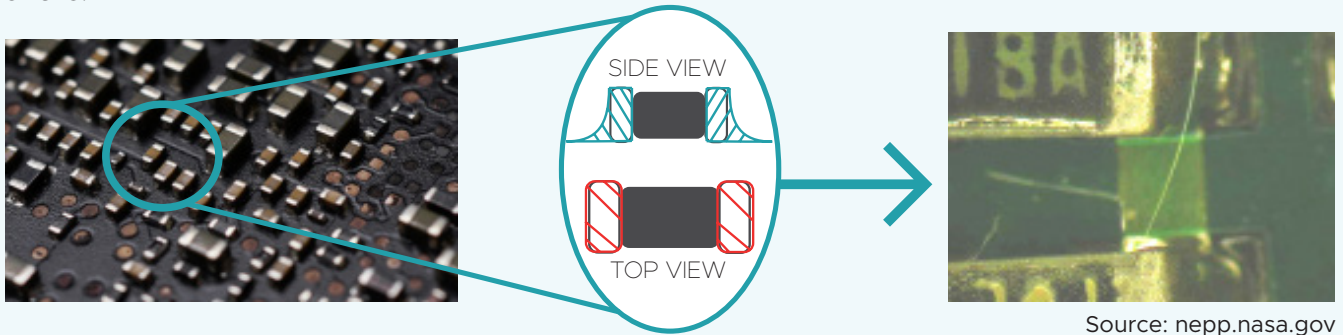
ALLOY
CONVERSION



ALLOY
REFRESH

SOLDER PASTE FAILINGS

Tin/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.



THE RETRONIX SOLUTION

With the automated process designed by Retronix for tinning micro components including 0402s, 0603s & SOTs to GEIA Standard, the industry finally has a 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, including the top of capacitor terminations.



In many cases, the approach to micro 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.