

Stocking of Components in Humidity Cabinets

The influence of humidity on the quality and reliability of electronic components is often not known or is underestimated. Especially the synthetic materials used in the mostly very sophisticated components tend to absorb humidity from the air.

In changing to unleaded soldering alloys it is essential to pay more attention to the stocking of components which are accessible to humidity (in accordance with international IPC/JDEC-standard). The higher processing temperatures – which are required because of the higher smelting temperature of unleaded solder – lead to a dangerous increase in vapour pressure. The cause is the locked in damp within the components which strongly expands during the heating proces. The critical mechanical bearing-power is exceeded then which results in cracks,popcorning, and delamination. To bring about a low humidity stocking and drying ovens were used so far.The combination of unleaded components with a higher storage temperature results in problems with decreasing soldering capacity of the components. Because of the so-called “baking” in drying ovens the oxide layer on the tinned connections increases considerably quicker than with tin-lead solderings. The component loses its soldering capacity because the strong oxide layers cannot be reduced or removed with the mildly working fluxes of electronics.

Up till now the problem could only be solved with the use of nitrogen in the drying ovens. The required concentration of oxygen of more than 1% can only be held with difficulty. The high expenses of permanent and maintenance intensive nitrogen rinsing can ,however, be saved. Already since about three years Totech has offered an alternative for the use of nitrogen in Europe with the programme Super-Dry.

Our Super-Dry Cabinets with very little humidity guarantee a reliable and in accordance with IPC/J-STD-033-Standard unlimited stocking or drying of components that are accessible to humidity. The patent Super-Dry Cabinets can hold an adjustable humidity degree of up till 1% in the cabinet and offer a very protective decrease in humidity of electronic components with environment temperature. Totech products operate friendly for the environment. The integrated humidity filter in the drying unit is cyclically reactivated in a digitally operated recycling proces and consequently the cabinet becomes maintenance free.



To connect the cabinet with a capacity of only 6 Watt with the drying proces you simply need a power-point. The high flexibility of the cabinet makes a quick respond to changes possible. Fixed supply channels, as with the use of nitrogen, are not required. The cabinets can be supplied in various sizes and are ESD-free. The closed position of all doors and the degree of humidity are constantly guarded, and on request also with an alarm function.