



Application Note for Processing the MKP Radial Film Capacitors

In order to safe guard the product properties and its reliability; we herewith inform the users of the Vishay MKP capacitors about some precautions to be taken to prevent lasting damage to the capacitors.

TYPICAL PROBLEM CAUSE

Due to the applied excessive soldering (= preheating + soldering) heat, the products in this picture are clearly deformed. In the inside of the box the flattened cell will deform to a cylindrical form; due to shrinkage of the film due to an excessive soldering high heat. The consequence is that also the capacitor box is swollen or deformed.

This mostly occurs when using the components on combined PCB's. In some cases, an interruption or bad functioning of the soldering machine transport system or not functioning of the cooling can cause the problem.

TYPICAL FAILURE PHENOMENON AND ROOT CAUSE

Decrease in capacitance value - Interrupted capacitor - Deformed capacitor body. The basic reason is that polypropylene dielectric materials, used for these capacitors, start to shrink heavily over 125 °C and even melt at 165 °C.

RECOMMENDATIONS

In order to avoid excessive overheating of the MKP film capacitor in the curing/soldering processes, the maximum inside component temperature at "preheating + soldering" must be lower than the "maximum allowed component temperature" as specified in the relevant datasheets. The component start to become damaged when exceeding 125 °C.

PICTURES OF NEW AND AFFECTED PRODUCTS

Upside picture: New products - before soldering, the capacitor box is not deformed.

Downside picture: Damaged capacitors - after soldering, the capacitor box is swollen or deformed.

