



KONNEKT™ Hand Soldering Guideline

The preferred method of attachment for KEMET's KONNEKT™ Capacitors is IR or convection reflow where temperature, time and air flow are well controlled.

However, it is understood that the manual attachment of KONNEKT™ capacitors is necessary for prototype and lab testing. In these instances, care must be taken not to introduce excessive temperature gradients in the KONNEKT part type that may lead to cracking in the ceramic or separation of the TLPS material.

The following methods of attachment and detachment are proposed based on successful demonstrations in our lab:

**The following methods are usable for both low-loss and traditional orientations.*

Getting Started

- Manual process only for lab and prototype. Not recommended for production
- Solder iron temperature (< 300°C)
- SAC solder paste recommendations
- Preheating recommended to limit temperature gradient. Placing the KONNEKT™ capacitor in an oven at 150°C immediately prior to the manual process can reduce risk of cracking
- Never touch the termination of a capacitor with solder iron
- Use recommended land patterns on KEMET datasheet

Manual Attach using Solder Paste

1. Attach the KONNEKT™ capacitor using dispensed solder paste and soldering iron.
2. Dispense solder paste to appropriately cover solder pad. Using anti-static tweezers, place the KONNEKT capacitor on the land pattern.
3. While gently holding the capacitor in place using tweezers, touch the soldering iron to one side of the solder pad so that the tip of the iron is touching the solder paste. Moving the tip of the iron from side to side on the pad can help with even heating of the solder.
4. Once the solder paste has entered a liquidous state, move the tip of the iron close to the termination of the capacitor while trying to avoid direct contact with the termination. Moving the tip of the iron from side to side on the pad can help with even distribution of solder. Once a good fillet is formed, remove the soldering iron and repeat the process on the second termination.
5. It is best to solder the second termination immediately after the first to take advantage of the pre-heated capacitor.
6. Visually inspect both solder joints using a 10x magnifying eye loop for smooth consistent solder joints.



Manual Attach using Flux Cored Solder Wire

1. Attach the KONNEKT™ capacitor using flux cored solder wire and soldering iron.
2. Place the tip of the soldering iron on one of the land patterns to pre-heat the solder pad.
3. After the pad is heated feed a small amount of solder wire onto the surface coating the pad evenly. The iron can be removed at this point. (Note that too much heat may damage the pad thus this is a process that only takes a few seconds.)
4. Pick up the capacitor using tweezers and reheat the solder from the previous step with the soldering iron tip.
5. Once the solder becomes liquid, position the capacitor onto the pad and close to the solder tip without touching it.
6. Ensure that the capacitor is flat against the pad surface and in proper position for both pads. Moving the tip of the iron from side to side on the pad can help with even distribution of solder. After the surface of the capacitor is wetted remove the iron and begin the steps for soldering the second termination.
7. It is best to solder the second termination immediately after the first to take advantage of the pre-heated capacitor.
8. While touching the tip of the solder iron to the second pad, feed a small amount of additional solder onto the surface of the second pad allowing it to flow across the pad.



Manual removal of KEMET KONNEKT™ Capacitor

1. The only approved method for removing a KEMET KONNEKT™ capacitor from a PCB is using soldering iron tweezers.
2. First place a small amount of liquid flux to the solder joints between the capacitor and the PCB on both sides.
3. Place the soldering iron tweezers on either side of the capacitor in contact with the solder joints.
4. Once the solder on both sides of the component have liquified, lift the capacitor from the PCB with the tweezers and set it aside. (Note that too much heat may damage the pads on the PCB. This is a process that only takes a few seconds.)
5. Once removed, the capacitor should be discarded and not reused.

