



Soldering of High Voltage Capacitors

It is extremely critical to properly preheat large ceramic capacitors during soldering or thermal shock will occur, resulting in immediate or infant failure of the part.

Parts should be gradually or step heated up to at least 100C of the solder reflow temperature. We recommend Sn62 or Sn60 or any other low temperature solder, with a liquidus around 180C. Preheat the part (and board if possible) to at least 160C.

Place in a cool convection oven or cold hot plate to warm, or step upon hot plates, 5 to 10 minutes each at 70C, 125C, 170C, or any other convenient method. It is even better if they can be heated on the board to which they are attaching.

For reflow solder, vapor reflow or IR spike are ideal since they impart little thermal stress. When hand soldering, it is best to use a low wattage iron. Do not touch the ceramic chip. Use only the bead of solder and the tab, allowing only enough time for sufficient reflow, then remove as fast as possible.

Free cooling is sufficient. Never force cool or place in liquid while hot. Check parts for insulation resistance or apply voltage to monitor process and insure no cracks were created.

WCI Recommended Solder Preheat “Step-Up” or Hot Plate Method

Solder Type	Sn62	955Ag
1 st Step	65 C/150 F	65 /150
2 nd Step	120 C/250 F	120 /250
3 rd Step	165 C/325 F	180 /350
4 th Step	N/A	205 /400
Solder Re-flow	230 C/450 F	275 /520

Oven Method

Oven preheat, place parts at room temperature and then turn oven on to 325 F.

Allow parts to reach temperature via convection.

Remove and use as needed using non-metal/non-heat conducting tongs or gloves. (Room temperature metal tongs may thermal shock the parts).