



TANTALUM CAPACITORS

Replacing Components using a Soldering Iron EPC 12/95

Printed circuit boards to which no manual repairs have been made are proven to pass testing processes with more success and to work more reliably. This is still the case when surface-mount components are involved. However, sometimes repairs with a soldering iron are unavoidable. Under these circumstances, the following guidelines can help to ensure a successful result.

1. Use a soldering iron with sufficient wattage and a regulated temperature. The adequacy of the soldering iron can be judged by the amount of time needed to reflow the solder. Beginning at 650°F (343°C), adjust the temperature so that the solder reflows within 1.5 to 3 seconds.

- If the solder reflow occurs in less than 1 to 1.5 seconds, this indicates that the tip temperature is excessive.

- If more than 3 to 3.5 seconds are needed for solder reflow, either the tip temperature is insufficient or the tip is cooling down when applied to the circuit board.

2. Apply a small amount of flux to the component termination and the pad layout.

3. After tinning the iron, place the iron tip on the circuit pad at the edge furthest from the component. The soldering should be completed in 1.5 to 3 seconds. If it is necessary to keep the iron on longer than 3 seconds, replace the component with a fresh device.

4. Add the solder at the solder tip to ensure that it flows from the pad to the termination of the component. Be careful not to add too much solder. The minimum is the best.

5. Never touch the component being worked on or any adjacent components with the soldering iron.

