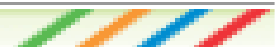


HOT BAR TECHNOLOGY

HOT BAR SOLDERING

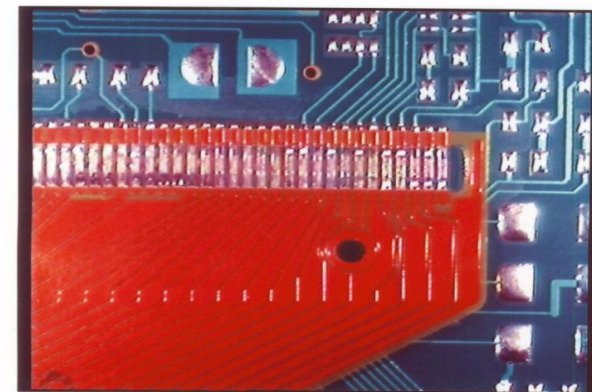
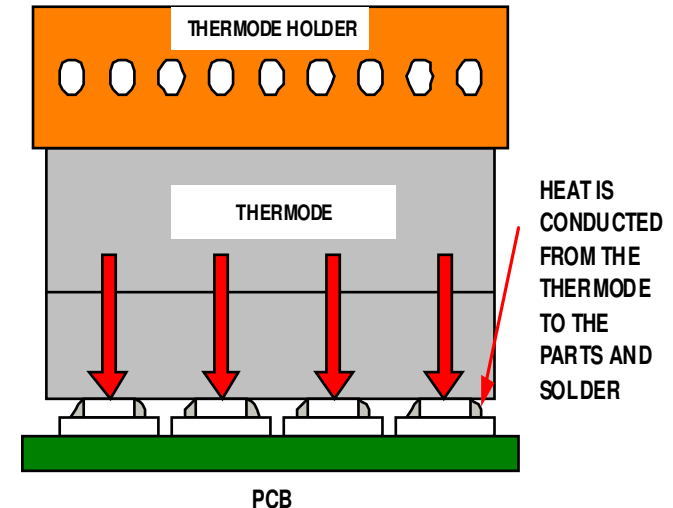


What is Hot bar soldering?

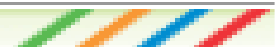
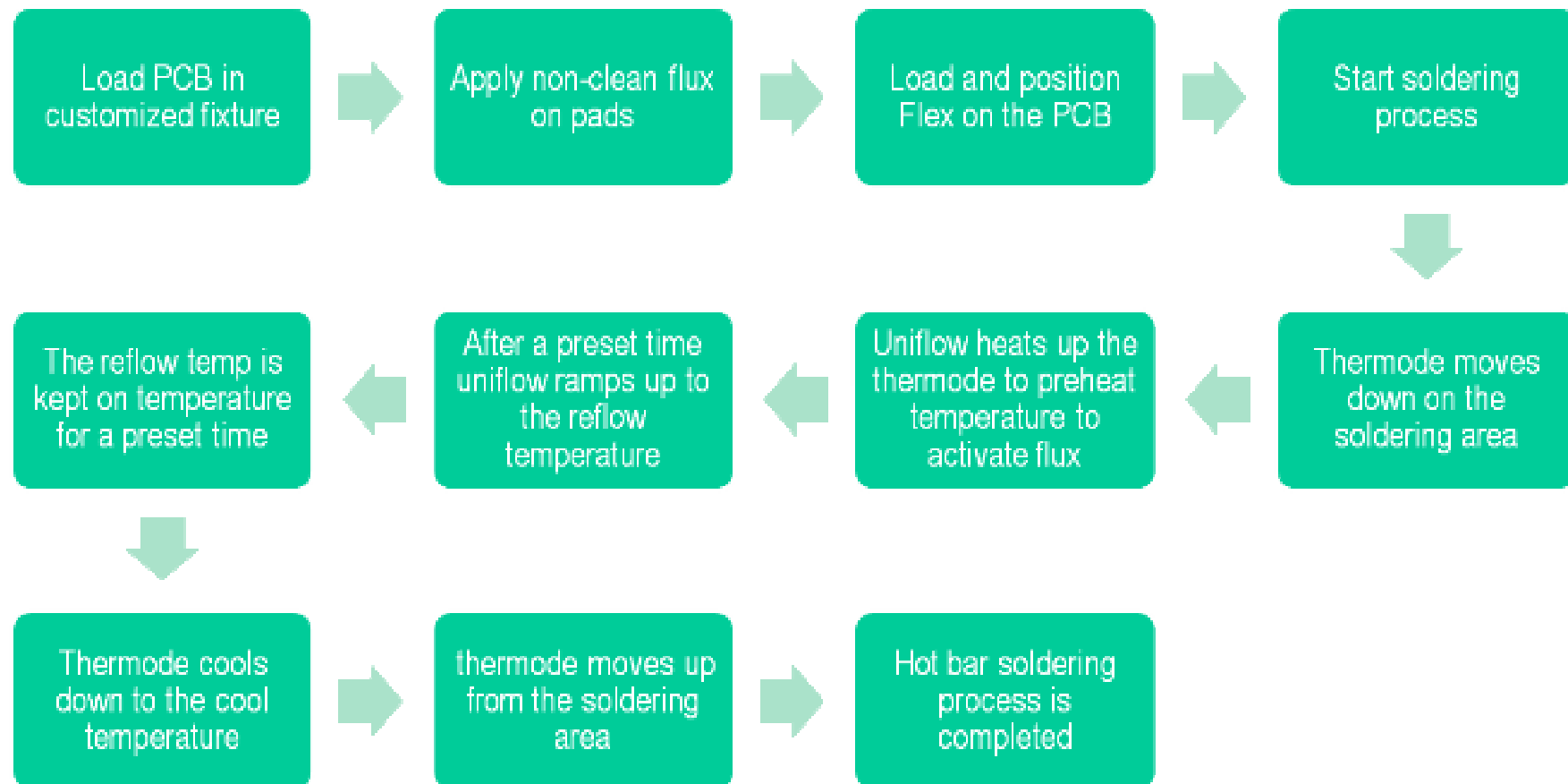
Pulsed heat Thermode (Hot bar) soldering, is a joining technology where two pre-tinned parts are heated to the melting point of the tin. The joining technology results in a permanent electro mechanical joint.

The required process energy is supplied by a thermode, also know as a Hot bar. This thermode is pressed on the upper part to transfer the thermal energy to both parts.

Closed loop process control is used to control the time-temperature profile .

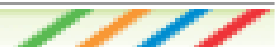


How does it work?



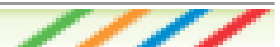
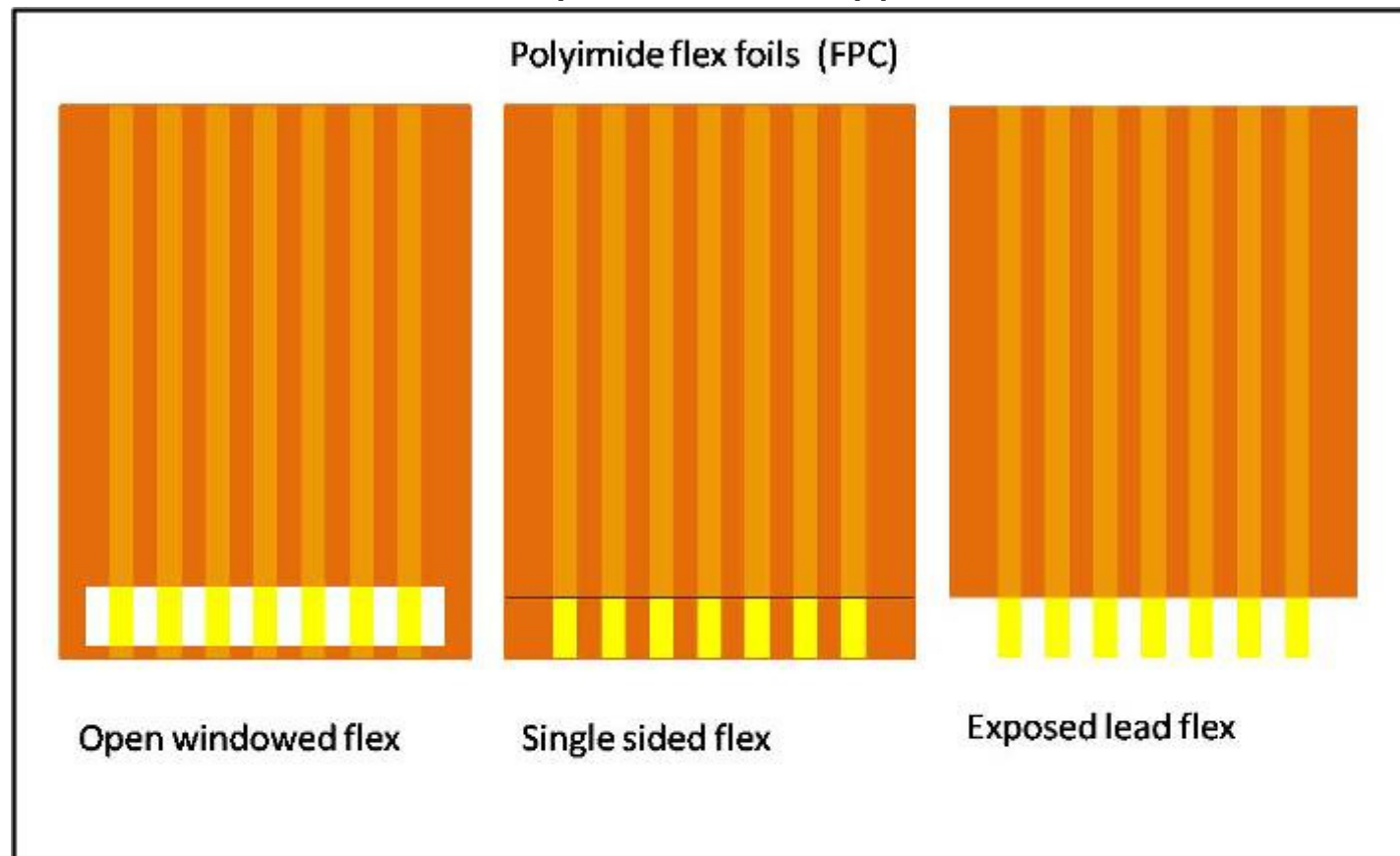
The benefits of Hot bar Soldering

- Suitable for mass production
- Reliable processing, always equal process conditions
- Cheap connection due to the fact that no third component is needed to connect flex/wire to the PCB/substrate (connector or ACA)
- Decent electrical connection



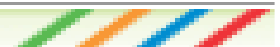
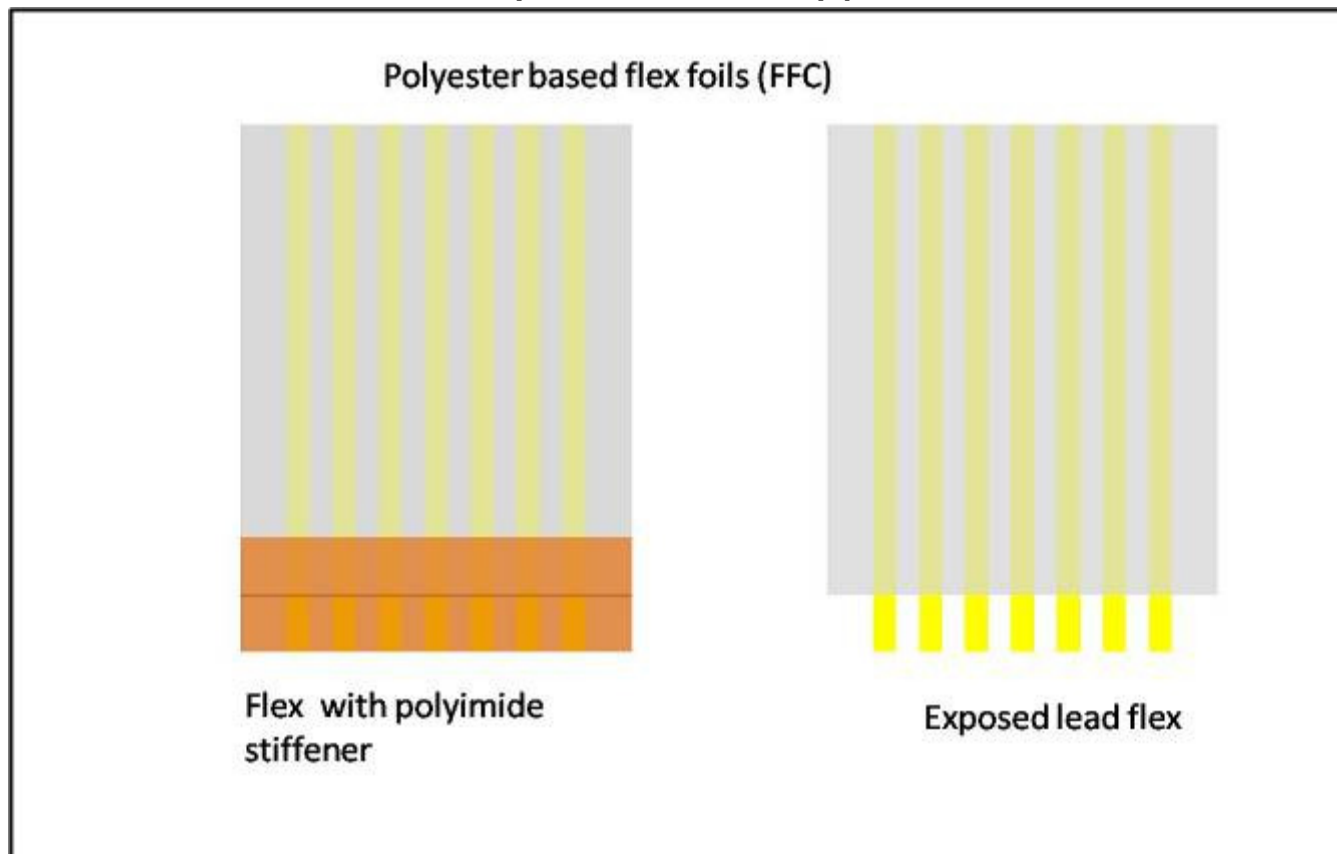
Flex and PCB design

Polyimide flex types



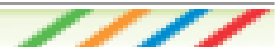
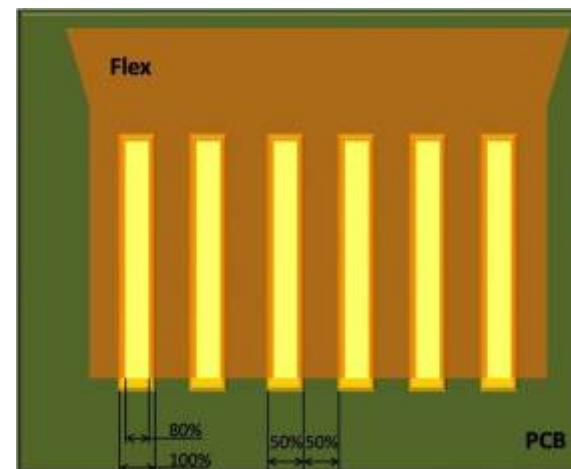
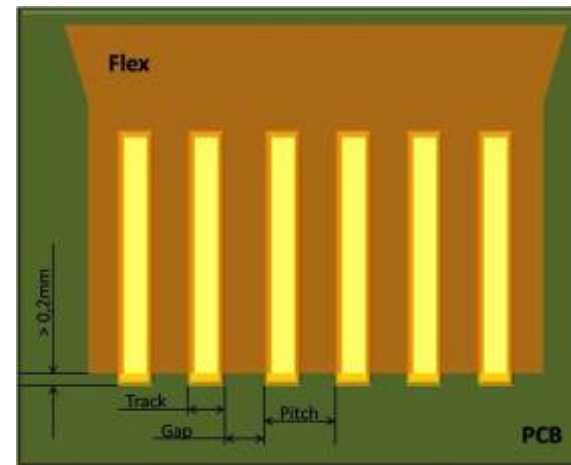
Flex and PCB design

Polyimide flex types



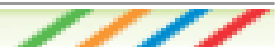
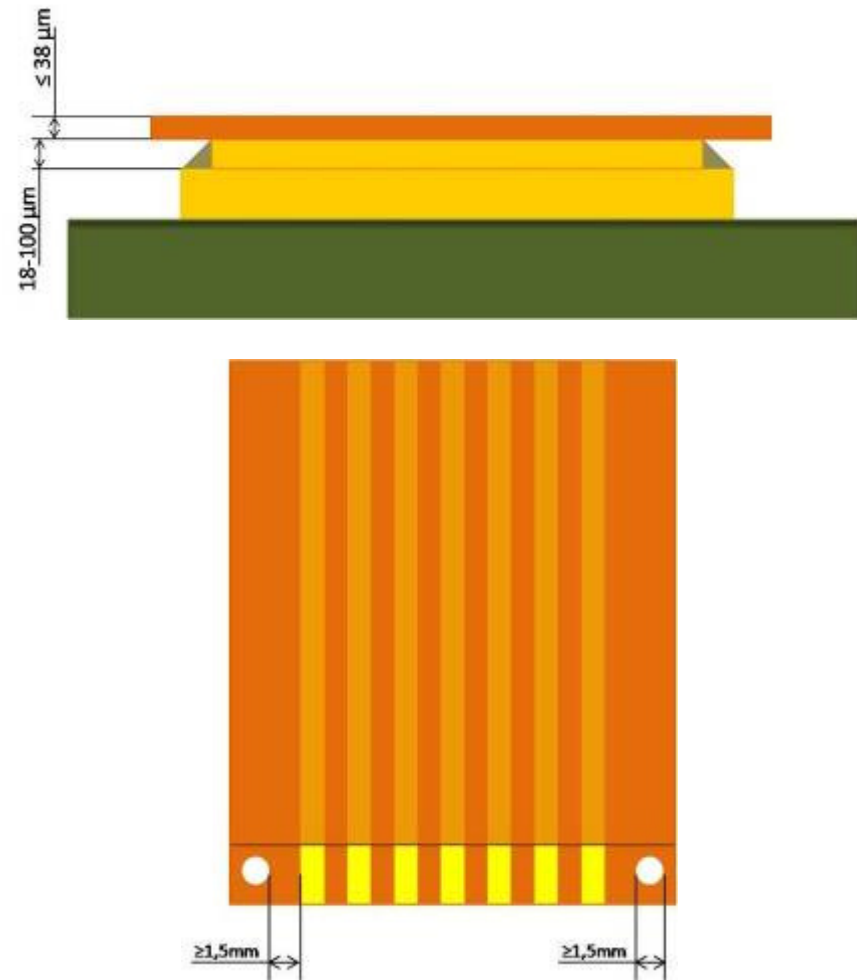
Design guidelines

- Track and gap of PCB should be both 50% of the pitch
- Track of the flex should be 80% of the track of the PCB
 - this allows excessive solder to flow
- Flex tracks should be approx. 0,2 mm shorter than PCB tracks
 - Visual inspection possible
 - Easy alignment check
 - Allow excessive solder to flow



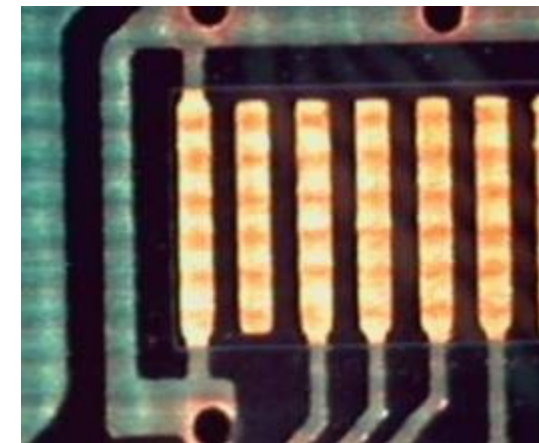
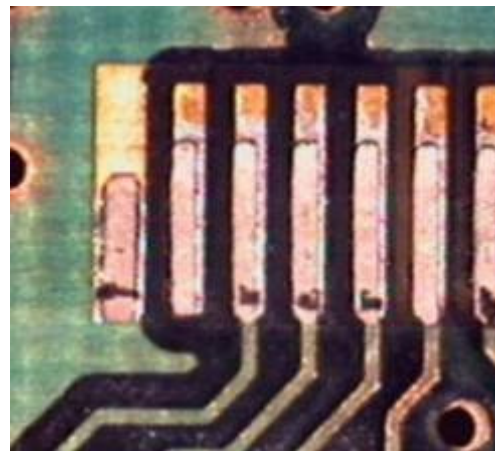
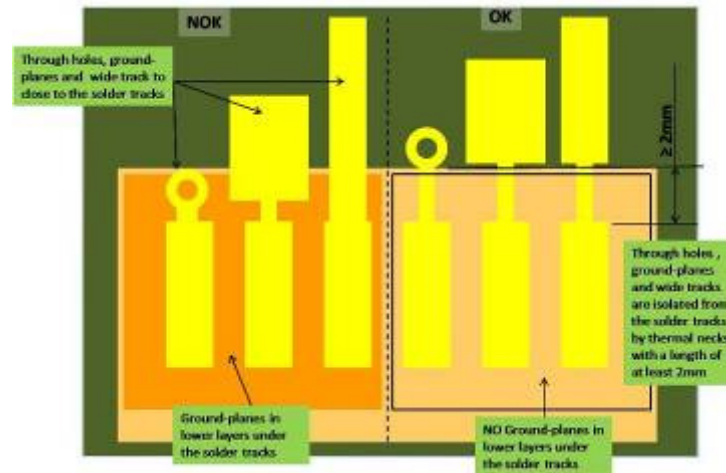
Design guidelines

- Thickness of polyimide in solder area should be as thin as possible
- Recommended diameter for locating pins should be at least 1,5 mm
- Locating pins should have a minimum distance of 1,5 mm from the outside tracks



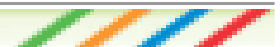
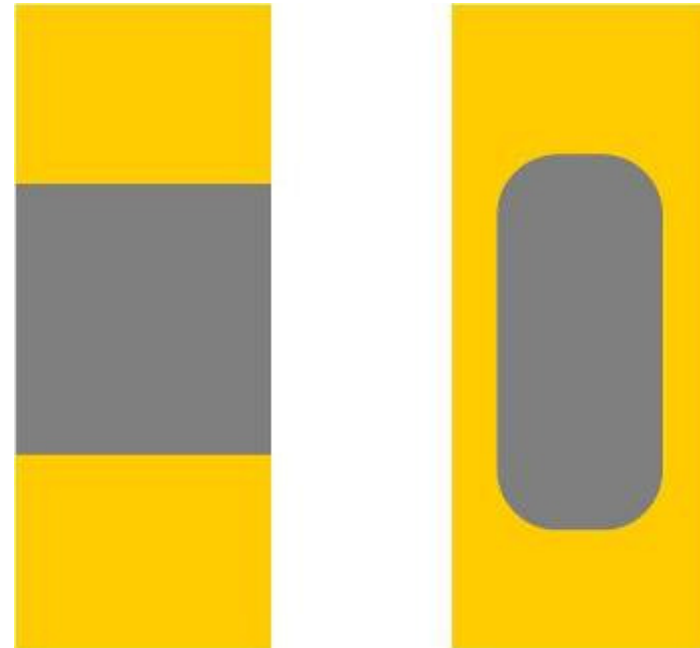
Design guidelines

- Groundplanes and through holes should be isolated from the tracks with thermal necks with a length of 2 mm and a width as small as possible
- Groundplanes in layers below the soldering area should be minimized in size and mass

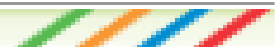
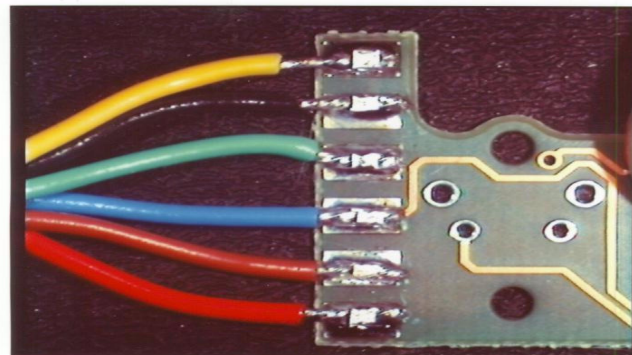
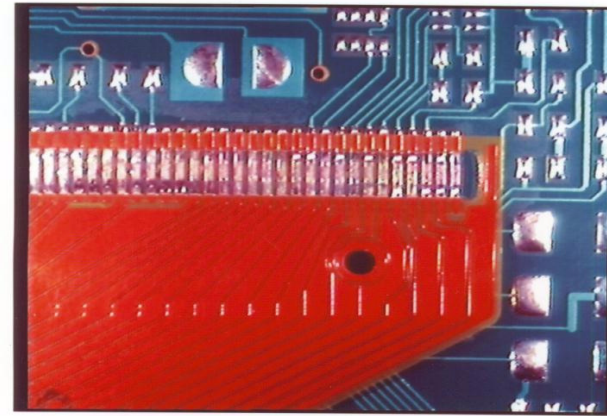
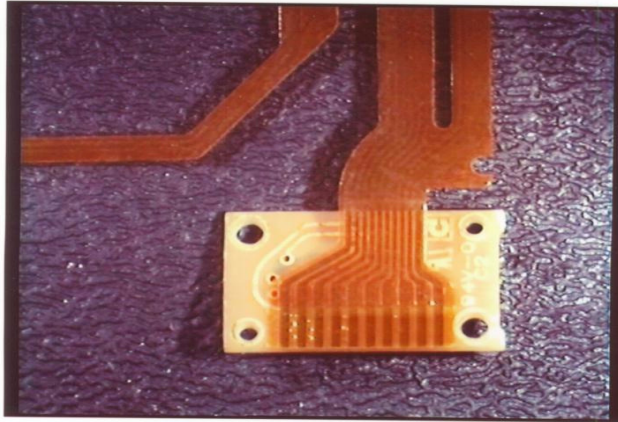


Flex and PCB designs

- Solder must be pre-tinned on PCB prior to Hot bar process
- Start point for screen printing is a 150 microns thick stencil with a mask opening that results in a 40% pad coverage
- For small pitch applications it is recommended to pre-tin the parts by electro plating as being the most accurate technology.



Hot Bar Applications



Hot Bar Applications

