CHAPTER 4

THROUGH-HOLE MOUNTING METHODS

SOLDERING BY DIPPING OR SOLDER WAVE

The maximum temperature of the solder must not exceed 260 °C, and the solder joint should not be exposed to such a temperature for more than 5 s. If the solder wave method is used, the total contact time of successive solder waves should not exceed 5 s. For more information on solder wave methods, refer to *Chapter 5*.

The IC may be mounted up to its seating plane, as long as the temperature of the plastic body doesn't exceed the specified storage maximum. If the PC board has been preheated, forced cooling may be necessary immediately after soldering to keep the temperature within the permissible limit.

The risk of solder bridging (i.e. short circuiting) between adjacent leads of an IC increases as the lead pitch decreases. So, for example, SDIP ICs with a 1.778 mm lead pitch have a higher risk of solder bridging than DIP ICs with their 2.54 mm lead pitch. This risk can be significantly reduced by mounting the component on the PC board so that its body length (and hence its row of leads) is parallel to the board's transport direction through the wave soldering machine (see Fig.1).

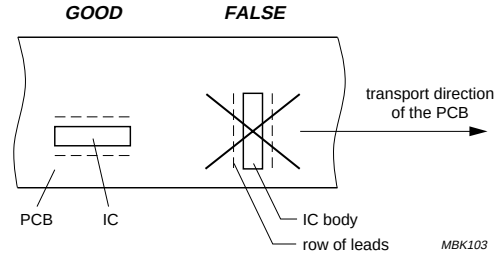

Fig.1 Correct placement of shrink lead pitch packages on the PC board during wave soldering.

REPAIRING SOLDERED JOINTS

Apply the soldering iron to the IC pin(s) either below the seating plane or not more than 2 mm above it. If the temperature of the soldering iron bit is below 300 °C, it may remain in contact for up to 10 s. If it is between 300 °C and 400 °C, it may only remain in contact for up to 5 s.