

Technical Information

Assembly and Soldering Instructions

The leads of devices with glass seals or in plastic package must not be bent and soldered close to the case. The distances noted below must be observed, otherwise any stresses set up in the material could produce cracks in the case. It should be noted that the effect to these cracks might become apparent only later and could result in the failure of the device. When bending the leads a suitable tool should be used to hold the leads thus keeping away any mechanical stresses from the case.

Because semiconductor devices are sensitive to excessive junction temperatures, designers should pay special attention to the lay-out of equipment and ensure that there is adequate space between heat-generating components and semiconductor devices. Semiconductor devices can be fitted in any position.

The following soldering recommendations are the result of experience gained in the treatment of semiconductor devices:

Soldering

The minimum soldering time is 2 ± 0.5 s at a minimum soldering temperature of 235°C and the maximum soldering time is 10 s at a maximum soldering temperature of 260°C (MIL-STD 883 B Meth. 2003.2 and Meth. 750/2031.1). The devices should not be subjected to any mechanical stresses during the soldering process.

Glass-encapsulated devices (e.g. DO-35 or DO-41): The joints of devices fitted in a horizontal position must be spaced not less than 4 mm from the case, and those of devices fitted in a vertical position must be spaced not less than 1.5 mm from the printed circuit board.

Plastic-encapsulated devices: The soldered joint should be spaced not less than 1.5 mm from the case.

Metal-encapsulated devices (e.g. DO-13): The soldered joints should be spaced not less than 1.5 mm from the case and steps must be taken to ensure that during the soldering process the case temperature does not rise to more than 115°C over 2 minutes.

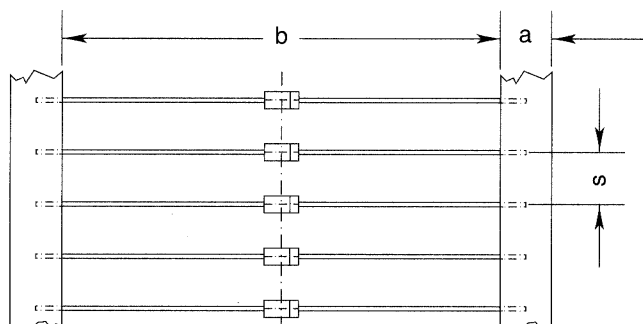
Exceptions

Soldered connections to tuner diodes and diodes switches is DO-35 glass encapsulations and all devices with case 23A3, 60A2, MELF and MiniMELF may be made directly to the case, thereby permitting full advantage to be taken of the low series inductance of these diodes.

Taping and Packing of Diodes and Rectifiers

Most diodes and rectifiers are supplied in taped form, in which case they are arranged so that the marked ends face the same way. For device dimensions refer to the relevant data sheets.

Packing: Devices packed in taped form are supplied either tin cartons or on reels with protective paper layers between components.



Tape dimensions (in mm) for various device outlines

		DO-41 Plastic	DO-41 Glass	DO-35 Glass	DO-34 Glass	DO-7 Glass	DO-15 Plastic	DIN IEC 286
Tape width	a	6 ± 1	6 ± 1	6 ± 1	6 ± 1	6 ± 1	6 ± 1	6 ± 1 9 ± 1
device spacing	s	5 ± 0.5	5 ± 0.5	5 ± 0.5	5 ± 0.5	5 ± 0.5	5 ± 0.5	5 ± 0.5 10 ± 0.5
Internal tape width	b	53 ± 2	53 ± 2	53 ± 2 27 ± 2	53 ± 2 27 ± 2	53 ± 2	53 ± 2	53 ± 2 73 ± 2