

Printed-Circuit Board Soldering Technique for RCA Infrared Emitting Diodes

by
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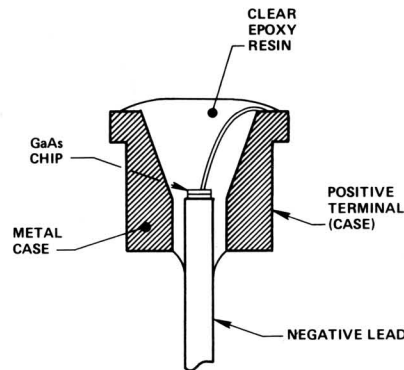
The optical window used in the RCA infrared emitting diode types SG1001, SG1002, SG1003, and SG1004 is a clear, unfilled epoxy resin. Although this material is thermo-setting, excessive heat (above 130° C for a period of 5 seconds) can cause the epoxy to soften and destroy the diode.

Accordingly, when soldering these diodes into standard double-sided printed-circuit boards only low-temperature soldering alloys and low-wattage soldering irons should be used.

A recommended soldering procedure for mounting these diodes in PC boards is as follows:

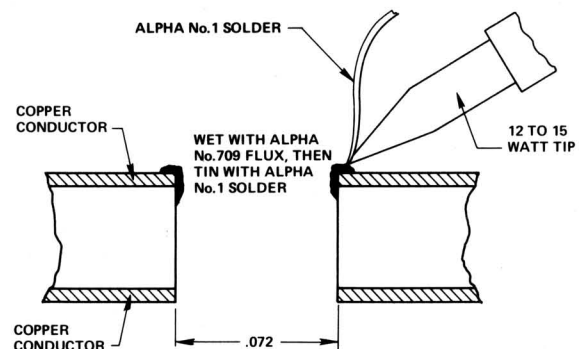
1. A suitable acceptance hole can be made in the PC board with a No.50 drill.
2. Clean the copper conductors of the PC board to remove any oxides, grease, or other contaminants which may inhibit solder wetting.
3. The area around the acceptance hole should be wetted with Alpha *No.709 flux, or equivalent.
4. After the flux has been applied, the area can be tinned using a small-diameter, tin-indium eutectic solder such as Alpha No.1, or equivalent, and a small-tipped soldering iron rated for about 12 to 15 watts. If desired, a variac can be used to allow additional control of tip temperature.

*Made by Alpha Metals, Incorporated, 56 Water Street, Jersey City, NJ 07304.



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Schematic of RCA IR-Emitting Diode

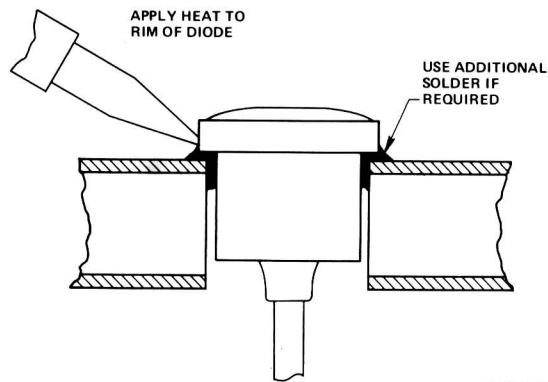


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Printed-Circuit Board Acceptance Hole Preparation

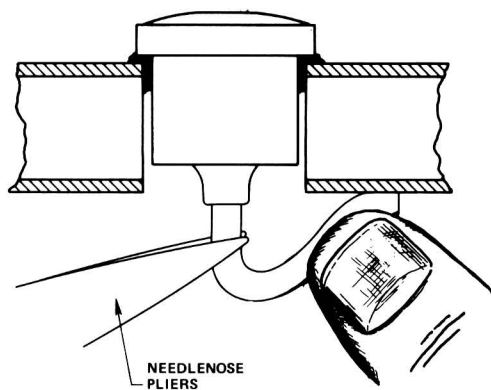
Drawings are not to scale.

5. The acceptance hole should then be re-wetted with Alpha No. 709 flux. After the diode is inserted in the hole, heat should be applied to the metallic rim (flange) of the diode until the solder flows. If required apply additional solder.
6. The upper part of the diode lead which protrudes through the circuit board should then be held with a pair of needle-nose pliers while the lower part is bent until it makes contact with the copper conductor of the PC board.
7. The diode lead may then be soldered to the copper conductor. For additional heat protection of the diode, the upper part of the diode lead should be held with the pliers during soldering. The pliers then serve as a heat sink. Cleaning of the diode lead prior to soldering is not required.
8. Flux residue left by the soldering operation may be removed by water. The use of chlorinated solvents should be avoided as they may cause damage to the epoxy.



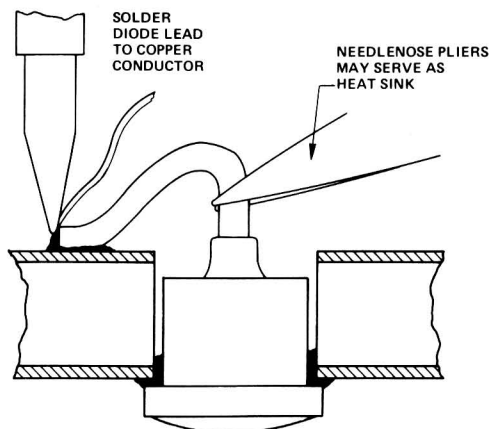
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Diode Insertion



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Making Contact With Copper Conductor



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Soldering Diode Lead to PC Conductor

Drawings are not to scale.