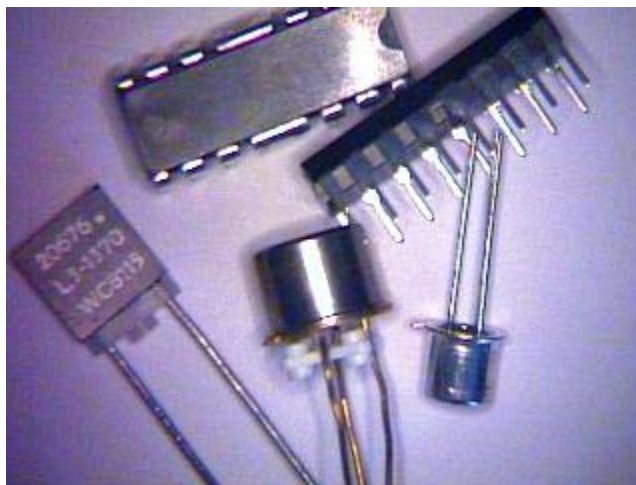


Radial leaded components have two or more leads extending from the bottom of the component like legs.



These types of leads generally do not have to be formed. The geometry of the plated through holes has been designed with a particular type of component in mind so the component leads will fit directly into the holes.

Radial leaded components are usually mounted away from the board surface to prevent “capping off” the PTH. This could lead to entrapment of flux or air in the PTH, which could have long-term detrimental reliability effects. IPC-A-610 requires the component body to board spacing be between .3 mm (.012”) and 2 mm (.080”). This can be accomplished by using a temporary spacer while soldering or by using a spacer that is designed to remain under the component.

Square Land or Pad

The square land or pad on a printed wiring board is a common way to designate polarity or orientation for pin-through-hole components. The square land is most often used by PWB designers to show where the marked lead or pin one of a multi-leaded component should be placed. Matching pin one of the component to the correct land or pad on the PWB is critical for the proper function of the component.

For components that have the positive or anode lead marked, like polarized capacitors, the square land typically indicates where the positive lead should be placed. For components that have the negative or cathode lead marked, such as diodes or LED’s, the square pad indicates where the marked (negative) lead should be placed.

Lead Protrusion

Both of the above component types must have their leads trimmed or clipped to a specified distance from the bottom of the board. Each class of product has different

criteria for how far a component lead can protrude from the bottom (secondary side) of the board. In class we will work to 1.5mm (.060) nominal lead protrusion. The minimum amount of lead protrusion is defined for all three classes as being able to see the end of the lead discernable in the completed solder joint.

Lead Clinching

In most cases we will use a straight through lead termination. There are some cases, however, where you may want to partially clinch (≤ 45 degrees) or fully clinch (> 45 degrees) a lead. This is usually done to make the completed solder joint look like all the rest on a specific board. Remember that it is harder to remove partially and fully clinched leads than straight through terminations.

