

# Components Guide

## For Reference Only

1. The components are accurately positioned with respect to the direction of pin and pin number verified in accordance with design criteria.
2. Although the components are located, they do not remain fixed in place. We can adjust them as per the layout requirements. Such permission is granted to the staff members who have in some way been connected to this project.
3. Mind the restricted areas where they have been indicated on the displayed drawings of components. For example, the restricted areas for altitudes, pluggable parts (jumper, connector...etc.).
4. The minimum distance through components and gold finger is 3mm or more.
5. All components must be placed vertically and horizontally on the board edge. Components in the directions with similar packing should remain consistent.
6. Mind the surrounding areas for pluggable parts and ensure such plug in/ out will not being affected; by using useful tools for plug in/ out, the surrounding areas may as well need to be taken into consideration (for example, a packed CPU mounted on a PGA Printed Circuit Board).
7. The distance between DIP and IC position is 100mil; 140 mil difference on resistor and capacitor.
8. The distances for each PLCC and PGA, DIP and IC position are 200mil. 100mil difference on resistor and capacitor.
9. A minimum distance of at least 10mil between other PTH components and a physical product. If possible, all components and lines are on the 0.1” grid (bending does not apply)
10. Except the components remain fixed in place, other products with PTH components should be kept within a distance of 200mil for the outer layer at board edge (apply within the areas of tooling holes).
11. The outer layer of SMC and PTH components remains a distance of at least 50mil.
12. If electrolyte capacitors are arranged vertically and adjacent tantalum capacitors, a distance of

at least 3mm or more should be applied.

13. Distances for a pad of two SMC should be at least 25mil.
14. SMC should be incorporated with the procedure for tin.
15. As per PC board of SMT equipments, board edge is 4mm; SMC components within are prohibited due to the transportation connection and positioning of board.
16. Mind the temperature changes of components upon placement.
17. For a double-sided SMC PC board, the heat absorption components should not be designed to the relative sides.
18. It is recommended that a distance of 50mm between two BGA is needed for the distribution of heat.
19. BGA package components cannot have other components placed with or within the 2mm spacing pitch.
20. It is recommended that a distance of 15mm between BGA package components and long through-hole component is needed for the distribution of heat upon soldering.
21. To facilitate in the maintenance, small SMD parts should be avoided being placed between connectors.
22. For safety purpose, it is recommended that a distance of 3mm or more is required on SMD parts surrounded by screw holes.
23. If a PCB is in a striped shape (for example, Stripe IC Card), the resistor and capacitor near the board edges should be placed vertically to avoid shipping damages.