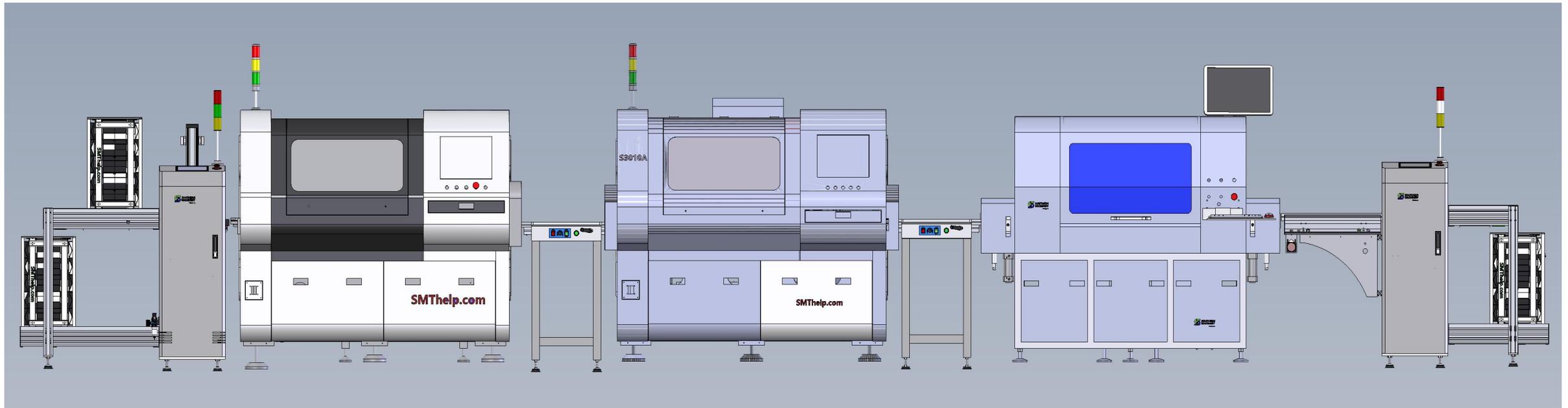
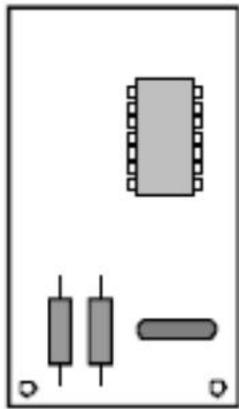


This design requirements refer to IPC and according to the basic requirements of THT process experience. However, it is not a permanent standard, the change of equipment model, specific machine production plant or quality requirements and IPC standard update will be changed. If you have any questions, please contact : info@SMThelp.com

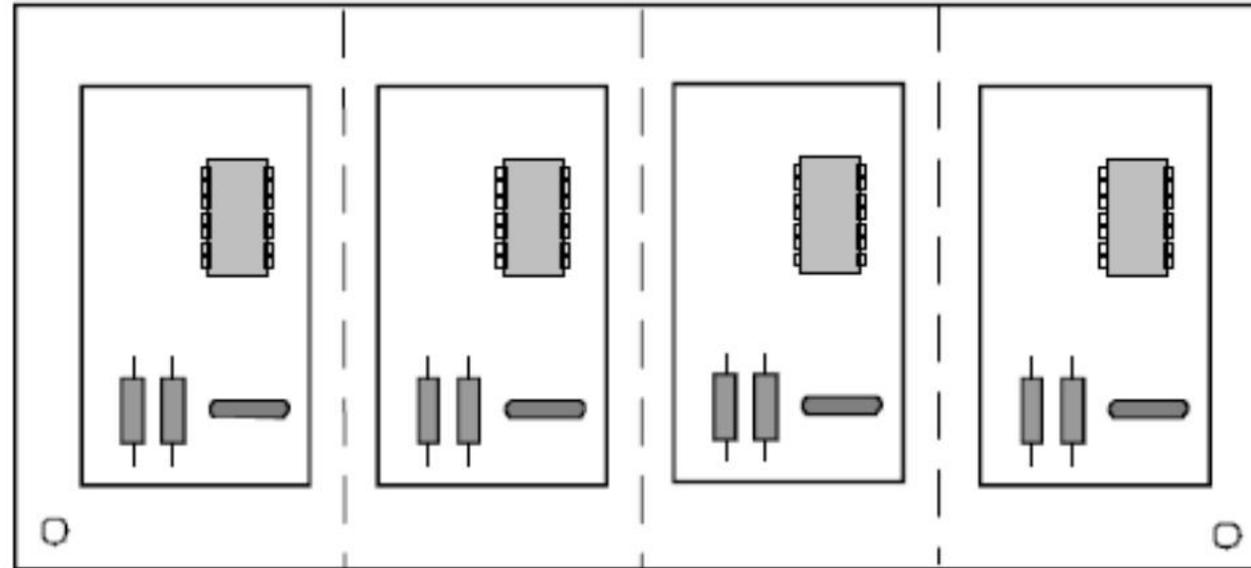


PCB Board Panelization

Throughput can be increased by positioning small PCBs into multiple breakaway panels or arrays or both. Standardization of panel size will reduce setup time during job changeover.

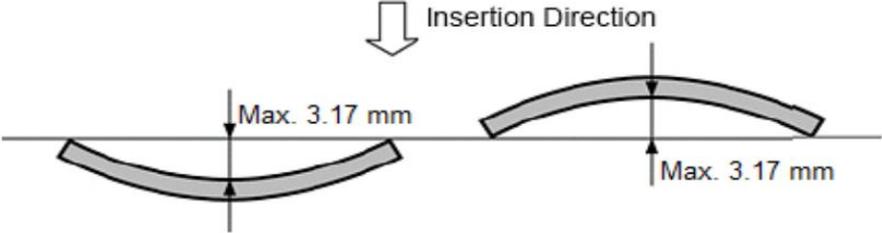
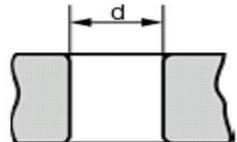
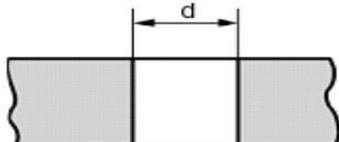
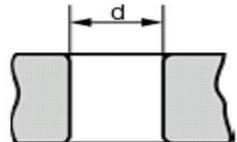
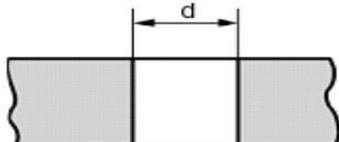
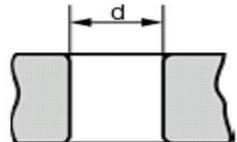
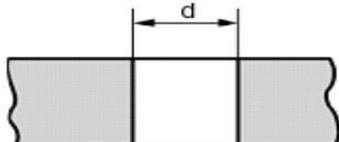
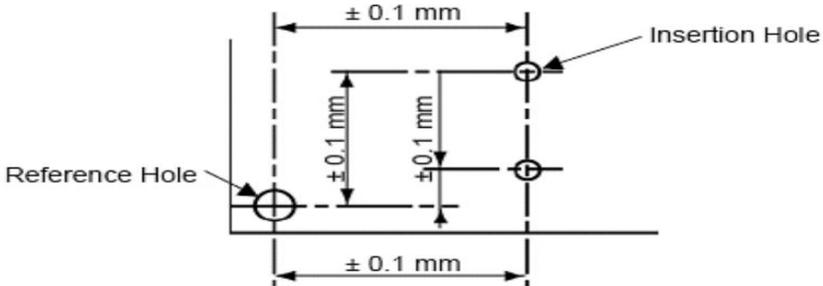


Single Printed
Circuit Board



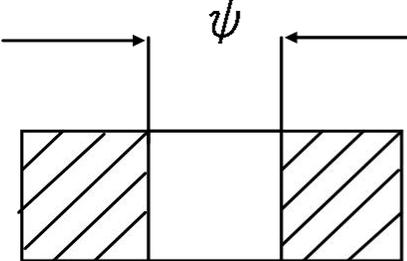
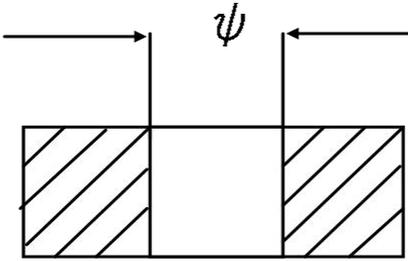
4 Circuit Panel/Array

PCB Accuracy

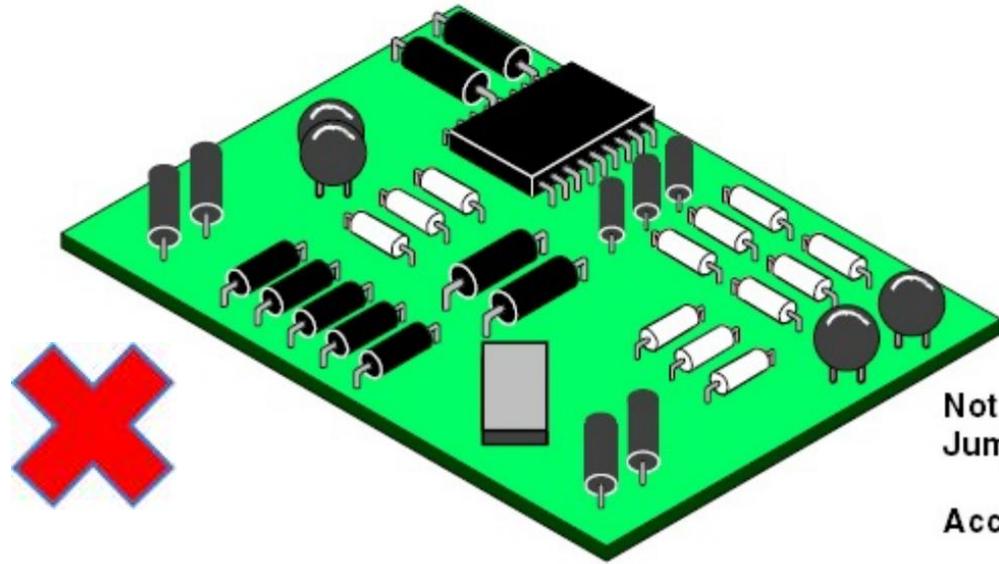
Item	Specification								
PCB Thickness	0.8 mm - 2.36 mm (0.032 in. - 0.093 in.) Option: 0.6 mm to 2.0 mm								
PCB Warp Tolerance									
Insertion Hole Diameter	<table border="1" data-bbox="886 515 1964 886"> <thead> <tr> <th colspan="2" data-bbox="886 515 1964 572">Hole Type and Diameter</th> </tr> <tr> <th data-bbox="886 572 1429 615">Punched Hole</th> <th data-bbox="1429 572 1964 615">Hole Type and Diameter</th> </tr> </thead> <tbody> <tr> <td data-bbox="886 615 1429 801">  </td> <td data-bbox="1429 615 1964 801">  </td> </tr> <tr> <td data-bbox="886 801 1429 886"> $\varnothing 0.9 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$ </td> <td data-bbox="1429 801 1964 886"> $\varnothing 1.0 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$ </td> </tr> </tbody> </table> <p data-bbox="886 886 1964 943">* When diameter of the lead wire is $\varnothing 0.8 \text{ mm}$, hole diameter is $\varnothing 1.1 \text{ mm}$.</p> <p data-bbox="886 943 1964 1022">* If you use hole diameter other than those designated, the insertion rate and component holing conditions may be attached.</p>	Hole Type and Diameter		Punched Hole	Hole Type and Diameter			$\varnothing 0.9 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$	$\varnothing 1.0 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$
Hole Type and Diameter									
Punched Hole	Hole Type and Diameter								
									
$\varnothing 0.9 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$	$\varnothing 1.0 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix} \text{ mm}$								
Insertion Hole Accuracy	 <p data-bbox="970 1379 1844 1416">Hole Variability between PCBs must be within $\pm 0.1 \text{ mm}$.</p>								

THT Insertion hole

Axial and Radial Component (Lead Diameter $\psi \leq 0.8\text{mm}$)

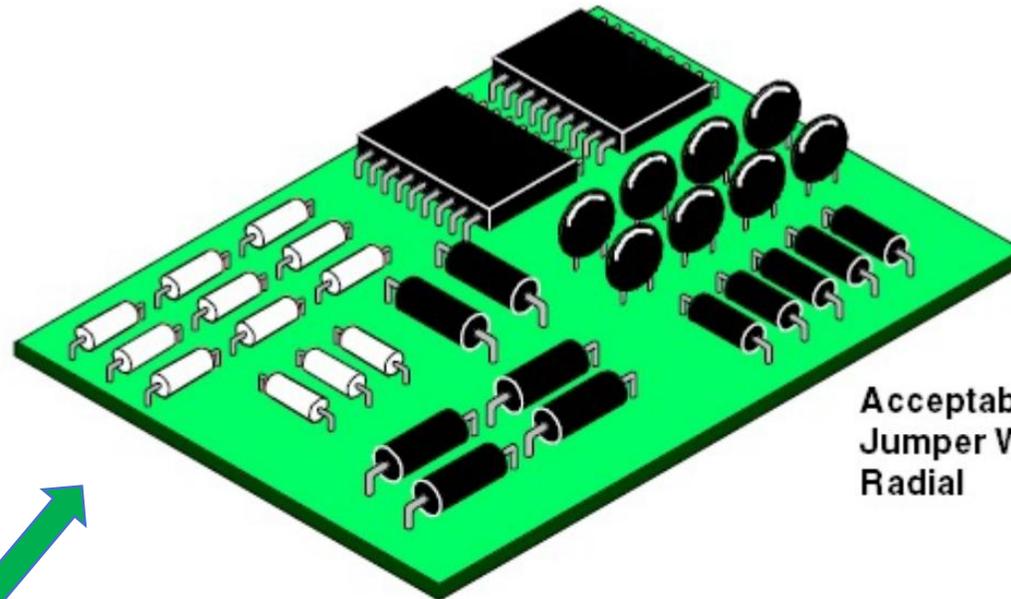
Lead Diameter	Hole Type and Diameter	
	Punched Hole	Drilled Hole
		
$\psi \ 0.8 \pm 0.05$	$\psi \ 1.2 \sim 1.3$	$\psi \ 1.3 \sim 1.4$
$\psi \ 0.6 \pm 0.05$	$\psi \ 1.0 \sim 1.1$	$\psi \ 1.2 \sim 1.3$
$\psi \ 0.5 \pm 0.05$	$\psi \ 0.98 \sim 1.05$	$\psi \ 1.1 \sim 1.2$
$\psi \ 0.4 \pm 0.05$	$\psi \ 0.8 \sim 0.9$	$\psi \ 1.0 \sim 1.1$

Radial Machines:
Capability of inserting components is from
 0° to 360° . For
maximum throughput, insert from 0° to 90° .



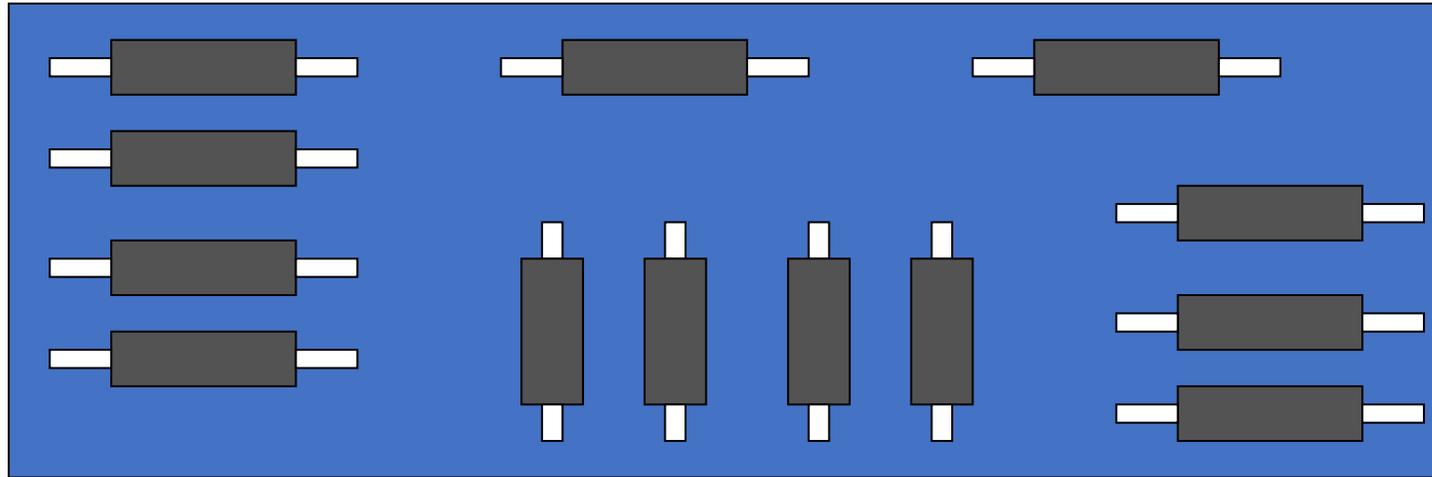
Not Acceptable:
Jumper Wire, VCD

Acceptable: Radial

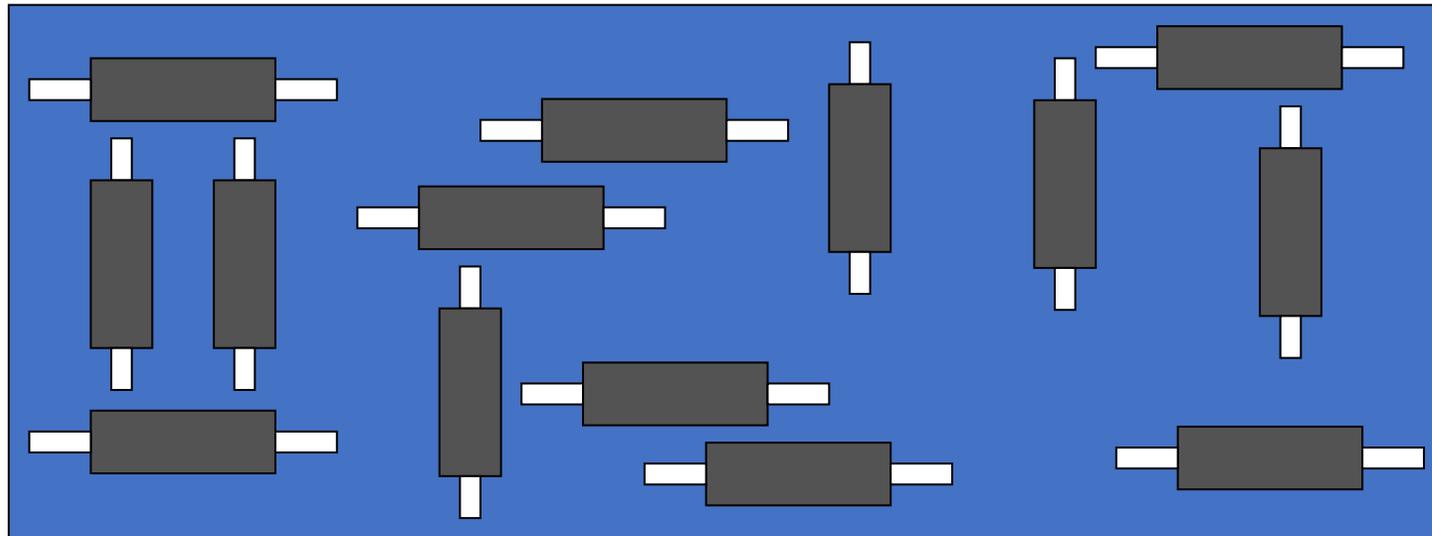


Acceptable:
Jumper Wire, VCD,
Radial

Axial Insertion Lead Clinching Layout



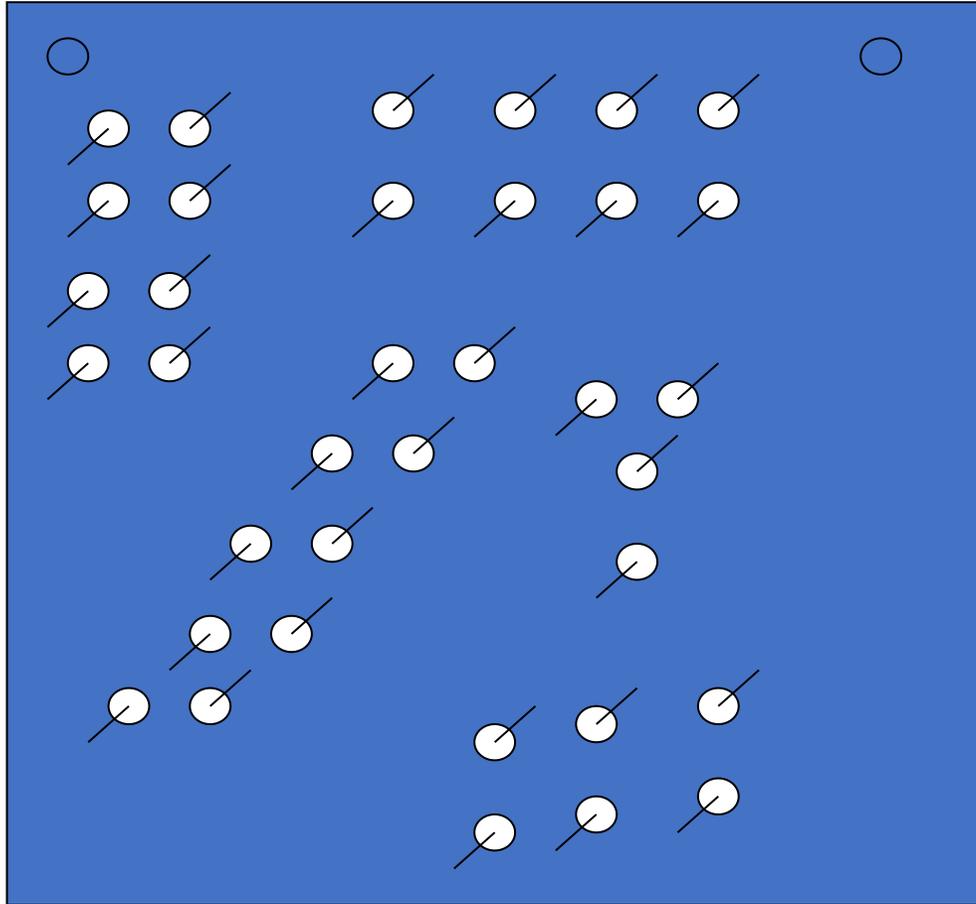
Recommend



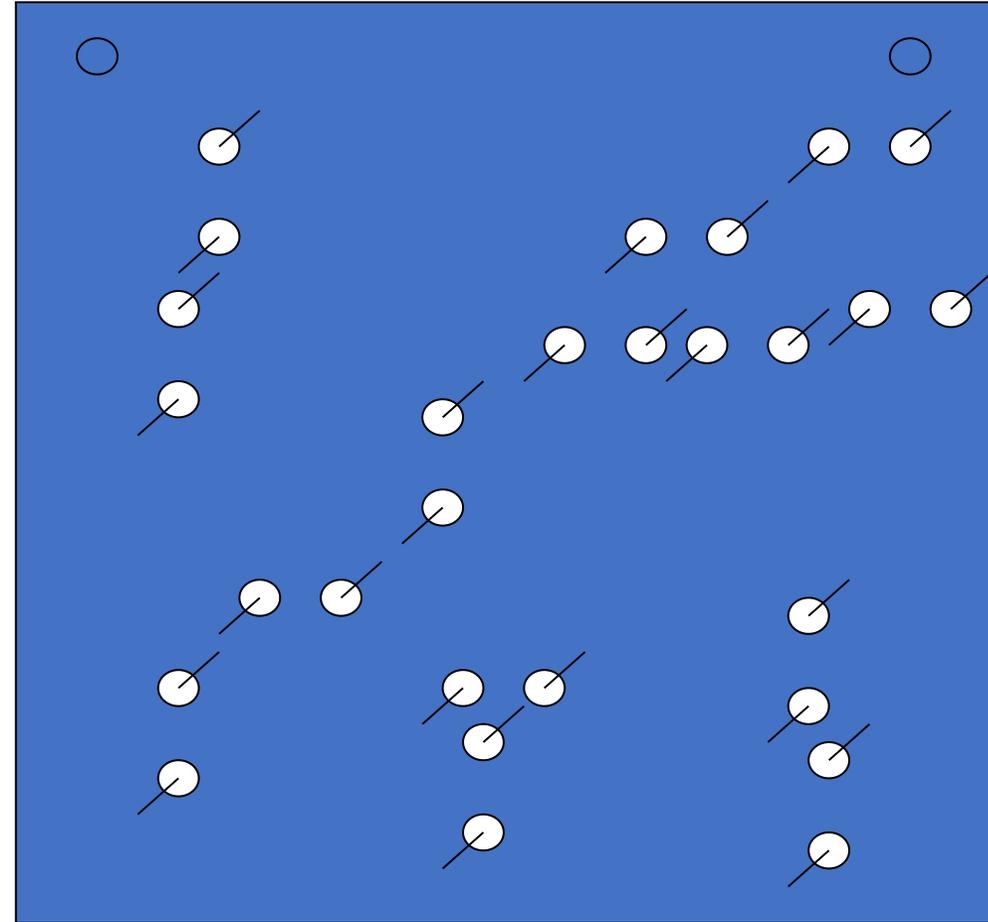
Not Recommend



Radial Insertion Lead Clinching Layout



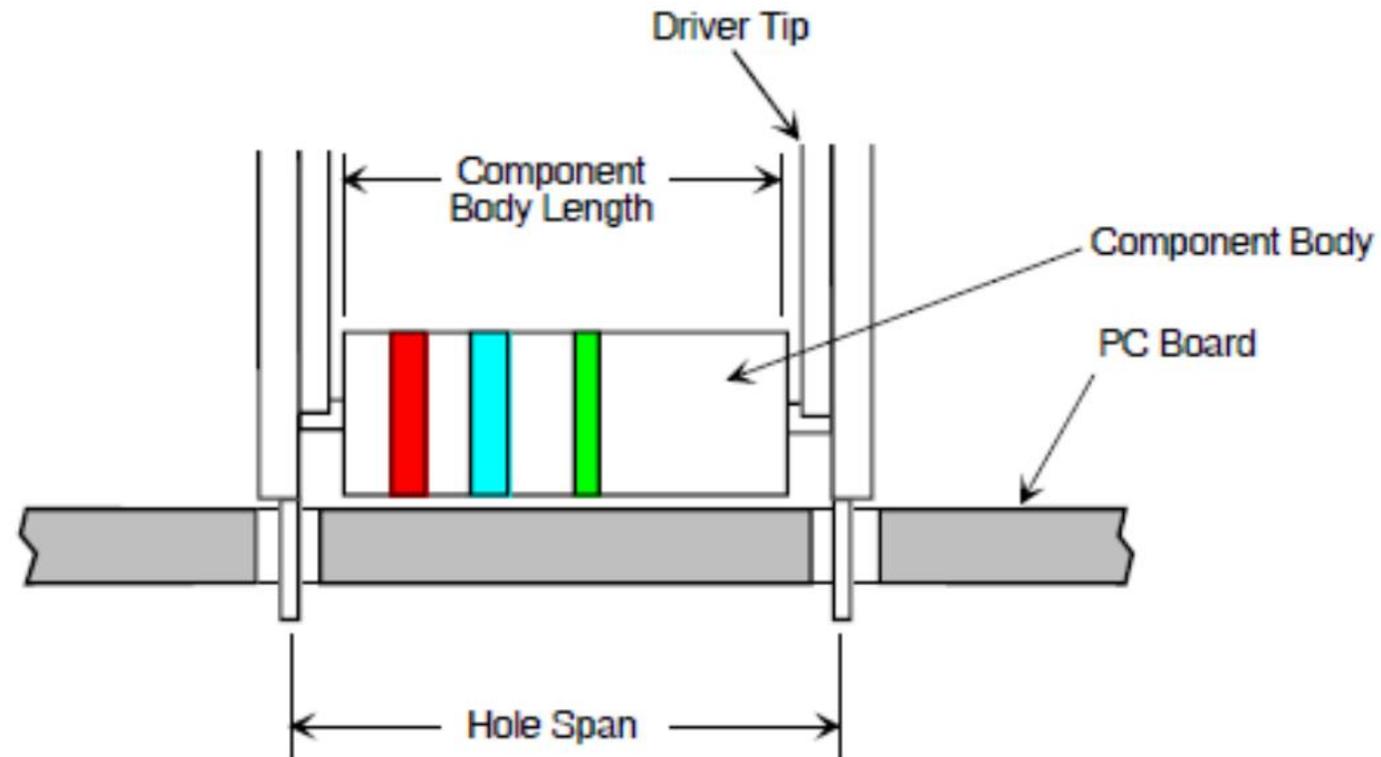
Recommend



Not Recommend



Axial Insertion Hole Span Formulas for Various Body Lengths



Minimum Hole Span = [(Component Body Length1 x 1.109) + 1.40 mm] - Lead Diameter

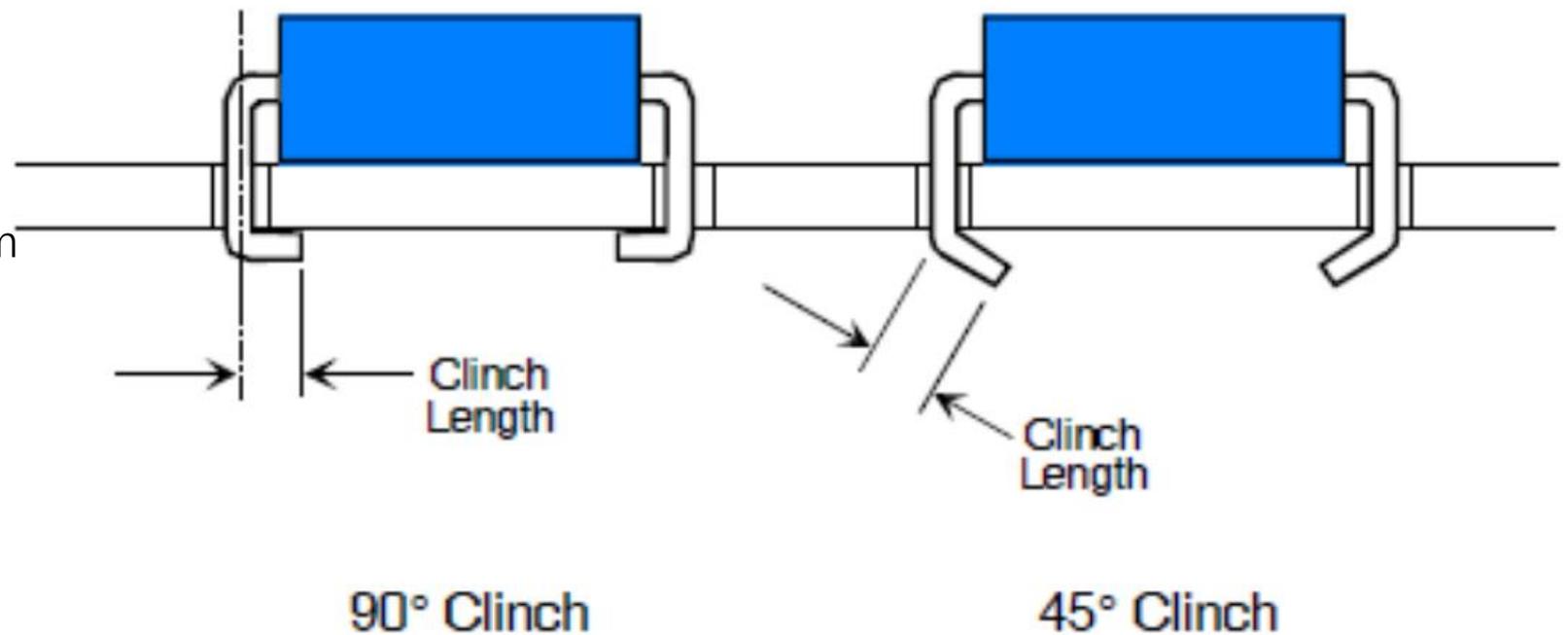
Clinch Lengths and Angles:

Clinch lead angle is adjustable over a range (0° - 45°).

Clinch lead length is adjustable from 1.28 mm (0.050 in.) to 1.80 mm (0.071 in.)

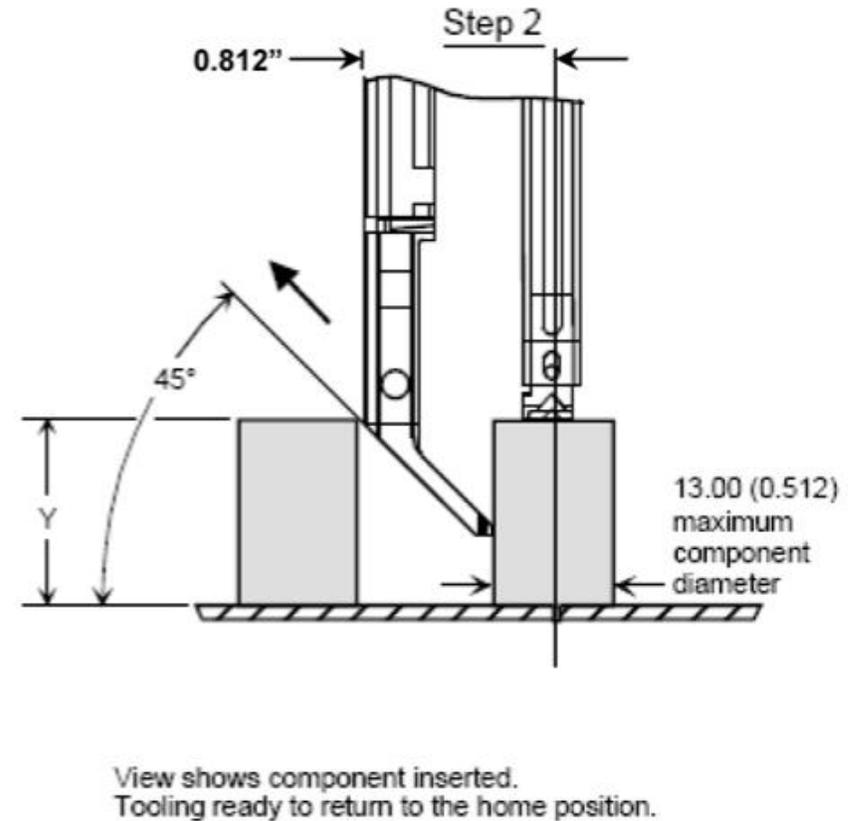
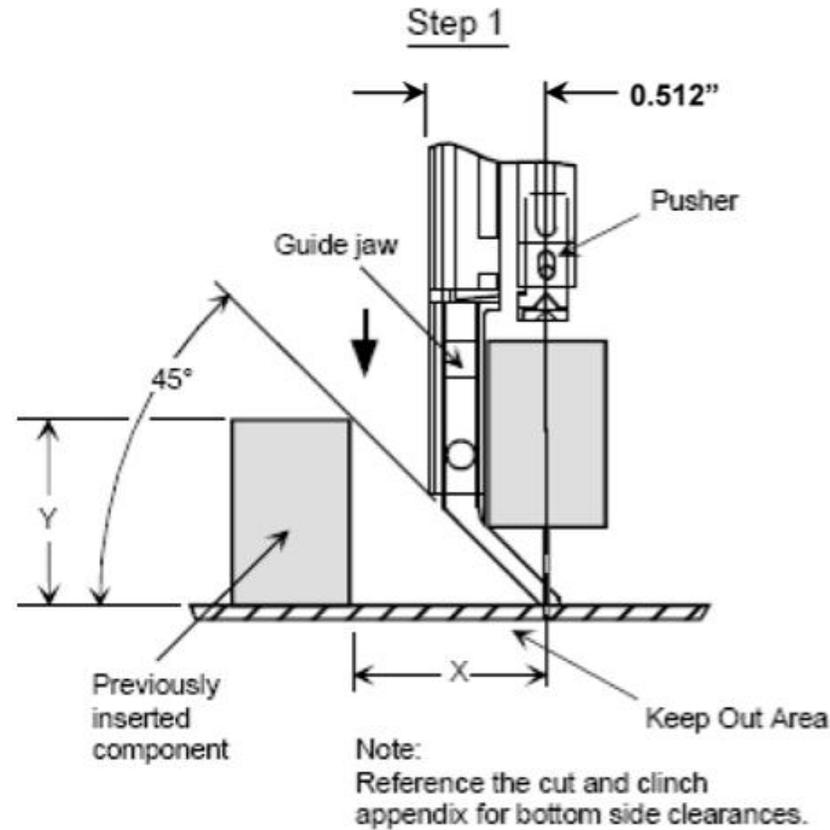
and is measured from the center of the insertion hole to the end of the lead.

Clinch Pattern Options



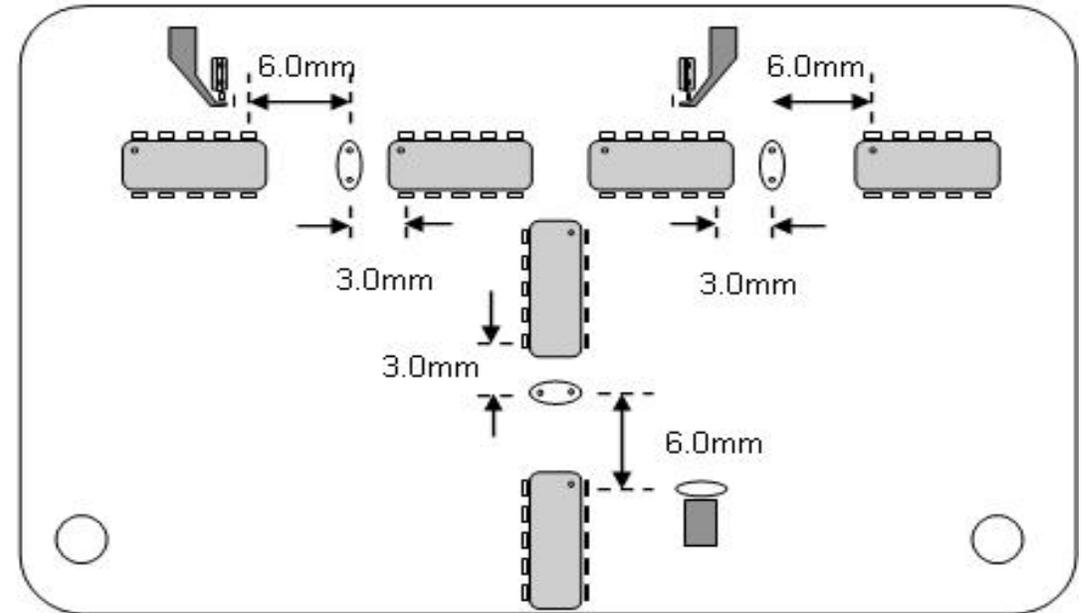
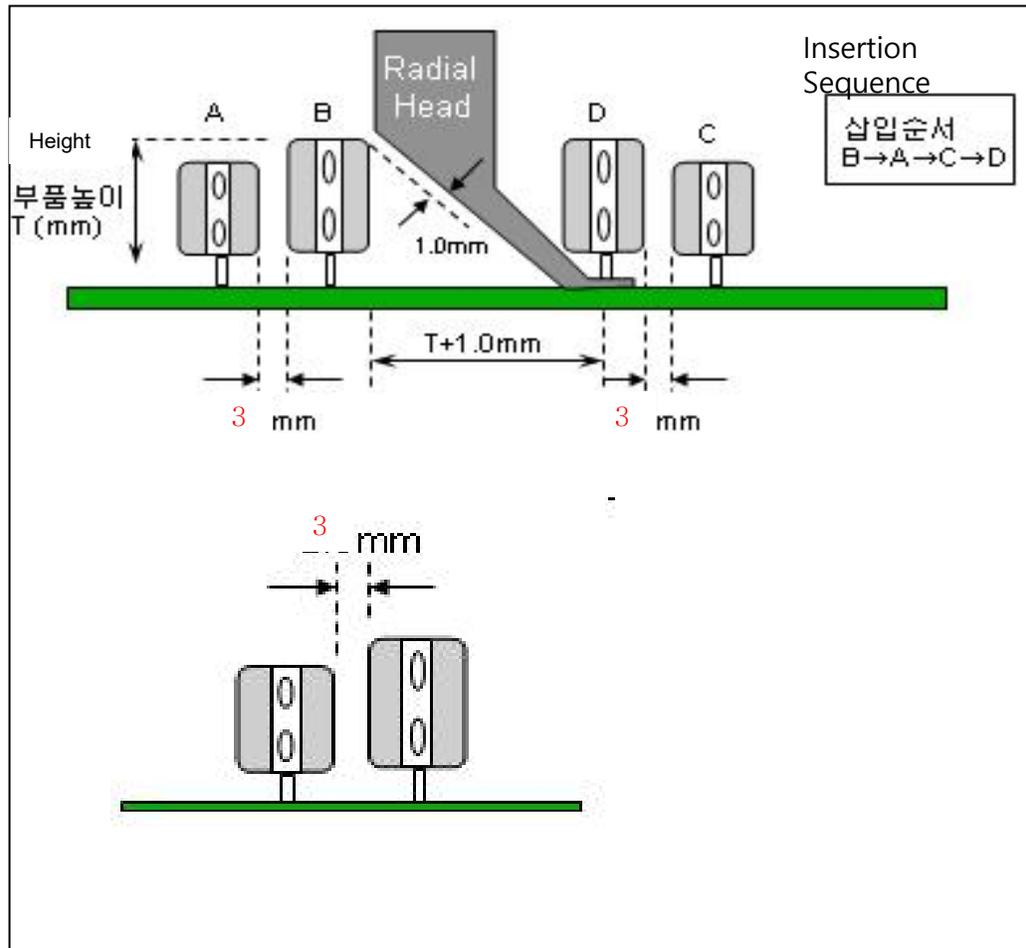
Radial Insertion Density --- top side

Dimensions are in millimeters;
inch equivalents are bracketed.

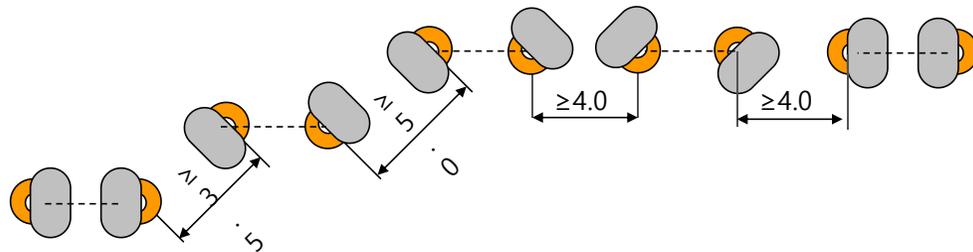
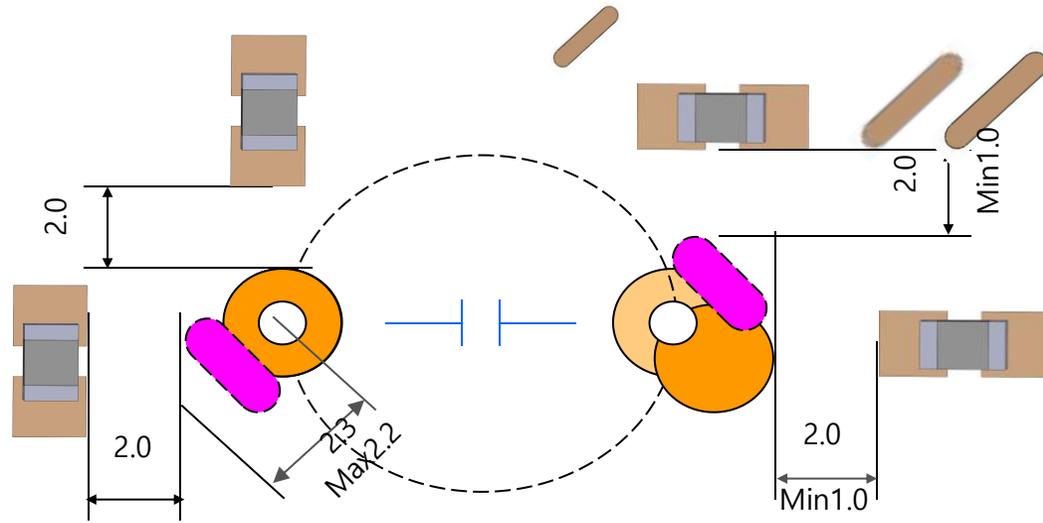


Formula: X (Keep Out Area) = Y (Previously Inserted Component Height) + 0.48 mm (0.019")

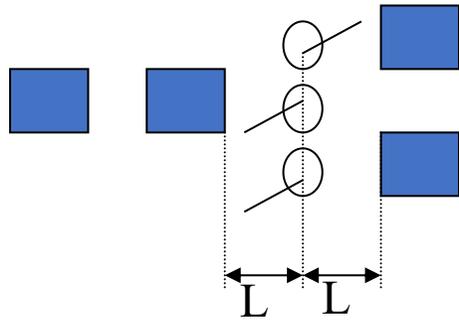
Radial Insertion Density --- top side



THT & SMD Pad distance



Radial & SMD



$L > 2.375\text{mm}$

Note: to avoid short circuit, the gap Radial Lead to SMD PAD $\geq 0.76\text{mm}$

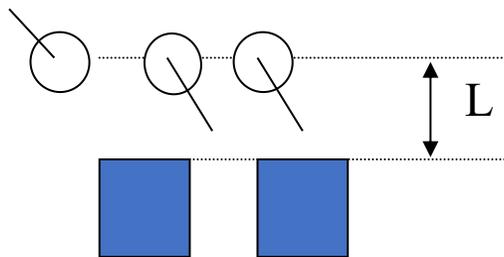
If below SMD:

a).0603: $L > 2.45\text{mm}$

b).0805: $L > 2.70\text{mm}$

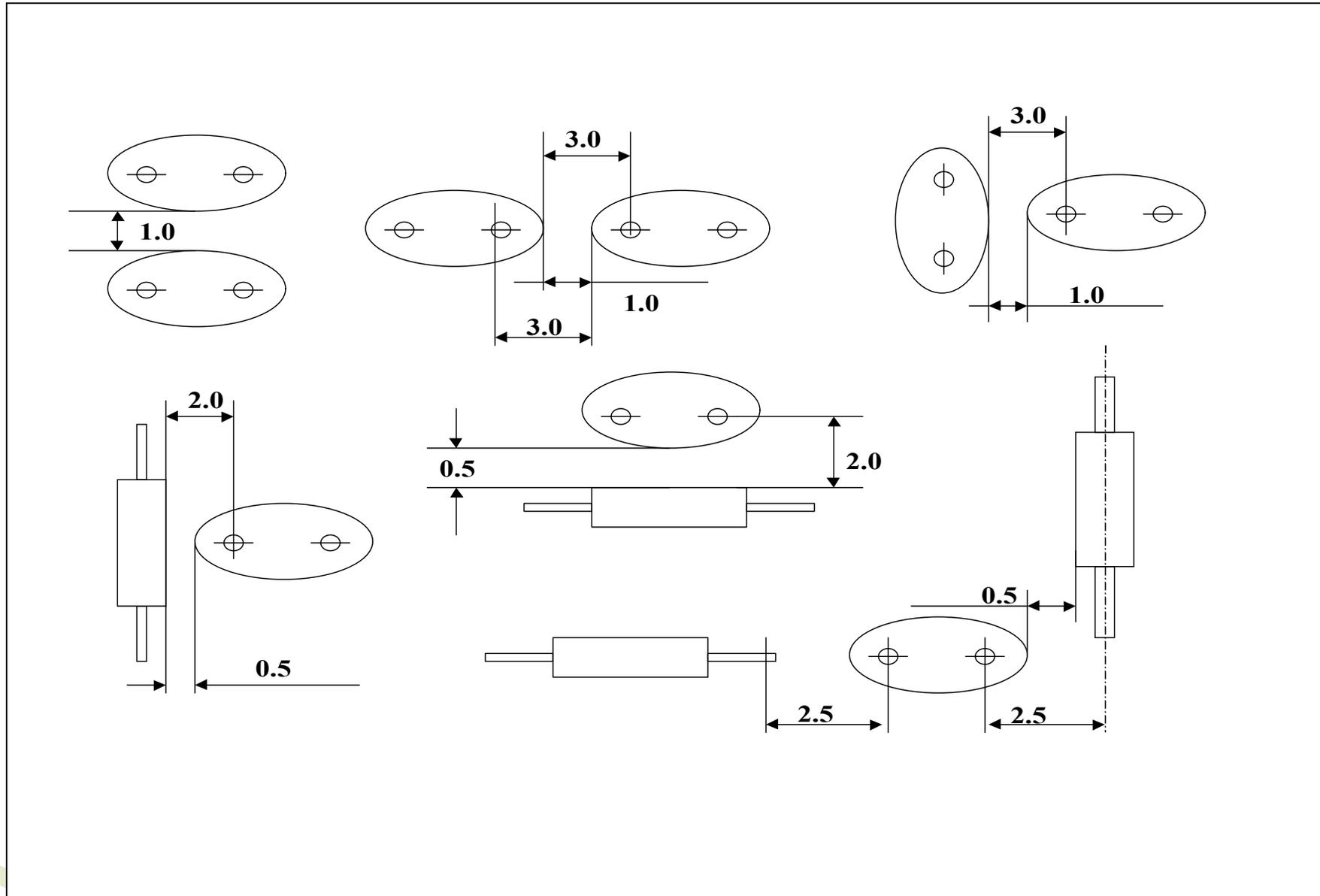
c).1206: $L > 2.75\text{mm}$

d).Other components are determined by the actual body size and the amount of glue

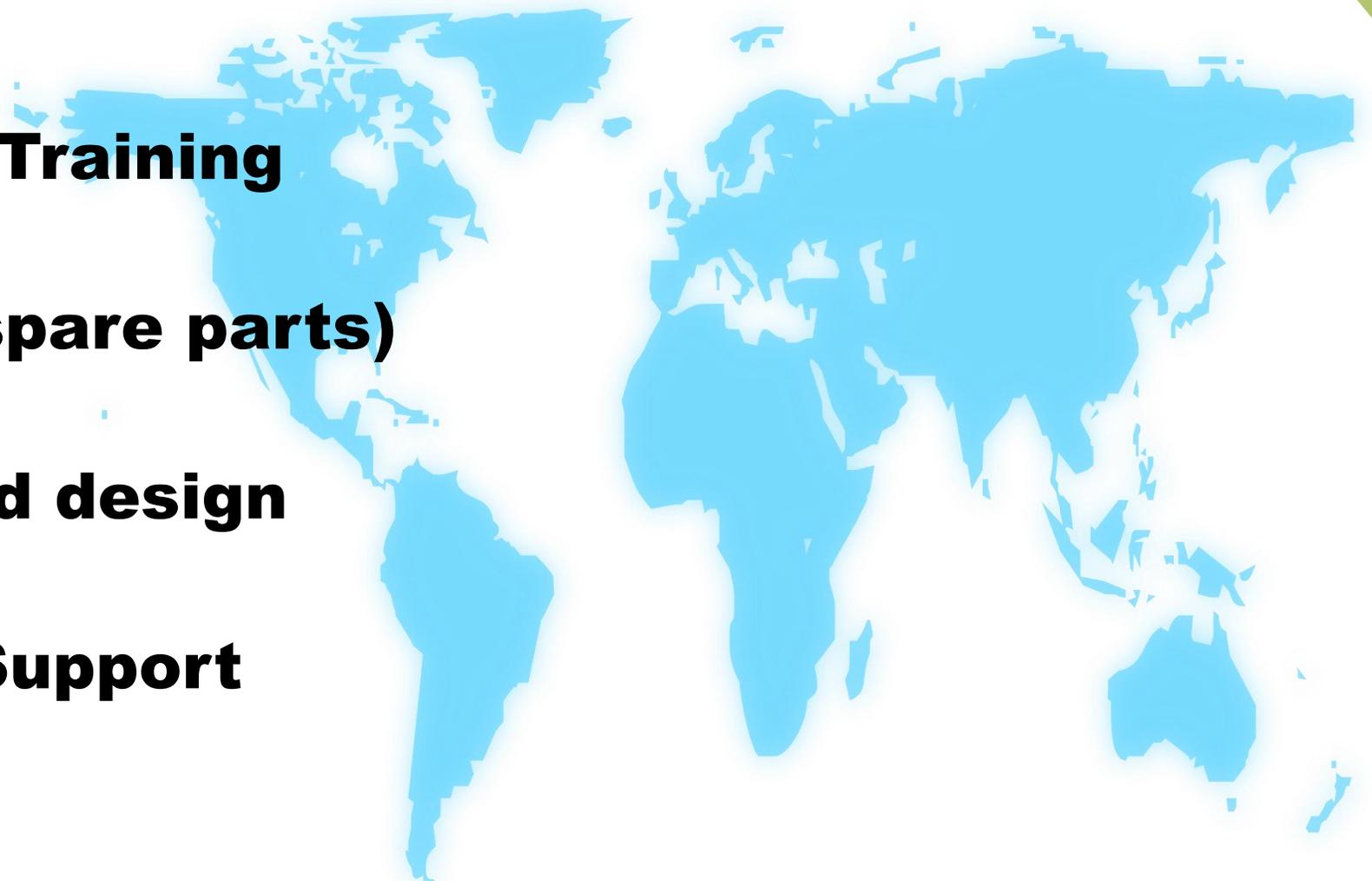


Note: Considering that when the copper mesh treatment tool is printed, the edge of the copper mesh groove touches the foot of the element, resulting in no glue printing

Note: If the component body is greater than the PAD, confirm the lower glue position.
Generally speaking, the component body is used as the reference for the SMD components.



Best After-sales service

- **Free Installation/ Training**
 - **1 day lead-time (spare parts)**
 - **5 days customized design**
 - **7x24 Worldwide Support**
- 
- A light blue silhouette of a world map is positioned in the background on the right side of the slide, behind the list of service features.

Welcome Inquiry

Please visit

www.smthelp.com

Find us more

<https://www.facebook.com/autoinsertion>

Know more our team

<https://www.linkedin.com/company/smtmachine>

Welcome to our factory in Shenzhen China

See more our machine please Google

[Auto Insertion](#)

Youtube

<https://www.youtube.com/c/Smthelping>

Looking forward to your email

info@smthelp.com