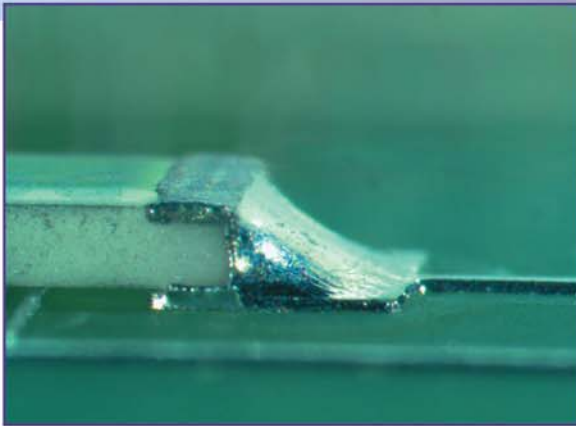


Target Condition

Chip Components • Class 2

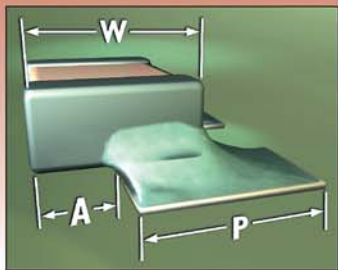


This photo represents a **target** surface mount solder joint for any class of rectangular Chip component.

The following illustrations show the **limits** of component misalignment and solder joint size. Solder joints that **do not meet** any of these conditions for 1-, 3- or 5-sided terminations should be considered **defects**.

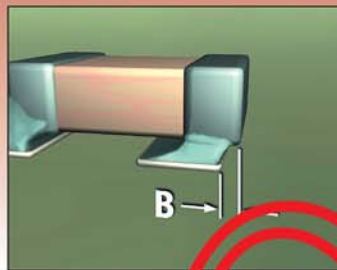
Notes: Solder joints are semi-transparent to show the relationship between land and termination. Minimum side joint length, dimension (D), is not required for chips, only a properly wetted fillet.

Acceptability Requirements



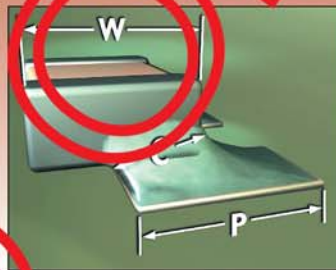
Side Overhang (A)

The component may overhang the side of the land a **maximum** of 50% of the width of the component termination (**W**), or 50% of the width of the land (**P**), whichever is less.



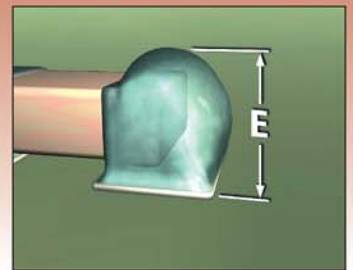
End Overhang (B)

Any part of the component termination extending beyond the land is a **defect**.



End Joint Width (C)

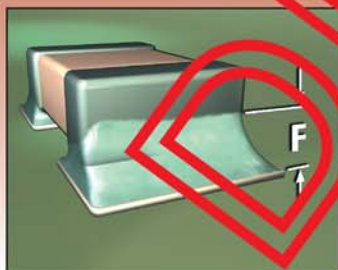
The width of the solder joint at its narrowest point must be a **minimum** of 50% the width of the component termination (**W**), or 50% of the width of the land (**P**), whichever is less.



Fillet Height (E)

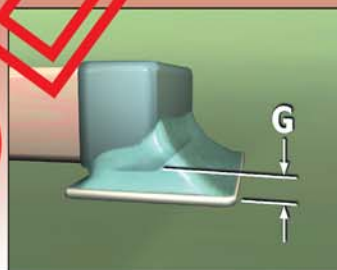
The solder may overhang the land, and extend onto the top of the termination, but **not touch** the top or side of the component body, as a **maximum** fillet height.

Acceptability Requirements



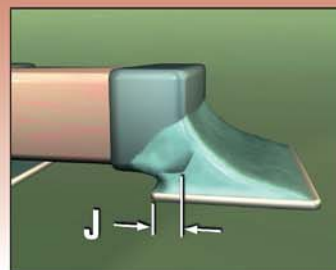
Fillet Height (F)

Wetting is evident on the termination's vertical surfaces as a **minimum** fillet height.



Solder Thickness (G)

The **minimum** distance between the land and component termination is **not specified**. Only a properly wetted fillet must be evident.



End Overlap (J)

Some amount of overlap between the component termination and the land is **required** for **minimum** acceptance.

References:
IPC-A-610F

Association Connecting Electronics Industries

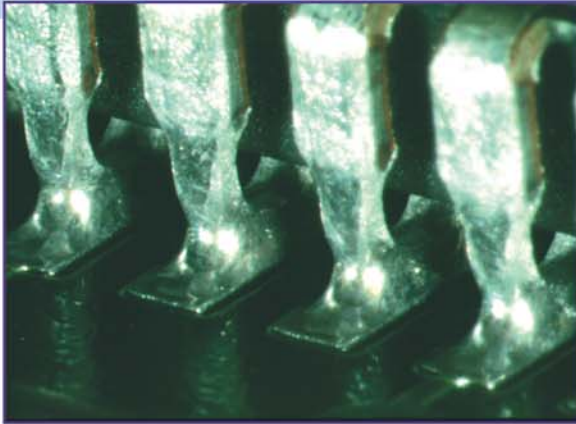


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Target Condition

J-Lead Components • Class 2

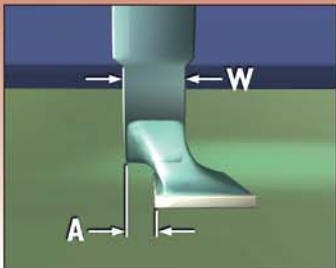


This photo represents a **target** surface mount solder joint for any class of J-Lead component.

The following illustrations show the **limits** of component misalignment and solder joint size. Solder joints that **do not meet** any of these conditions should be considered **defects**.

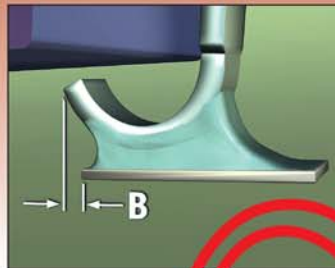
Note: Solder joints are semi-transparent to show the relationship between land and lead.

Acceptability Requirements



Side Overhang (A)

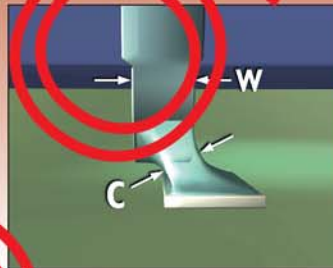
The component lead may overhang the side of the land a **maximum** of 50% of the width of the lead (**W**).



Toe Overhang (B)

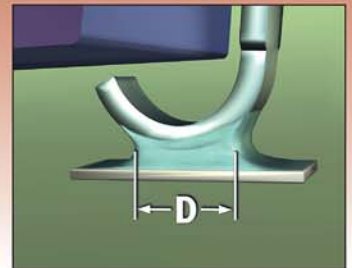
The **maximum** distance the end, or tip, of the lead may extend over the edge of the land is **not specified**.

*Lead must not violate minimum electrical clearance.



End Joint Width (C)

The width of the solder joint at its narrowest point needs to be a **minimum** of 50% the lead width (**W**).



Side Joint Length (D)

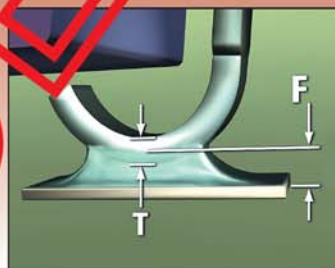
The length of the solder joint at its narrowest point must be a **minimum** of 150% the width of the lead (**W**).

Acceptability Requirements



Fillet Height (E)

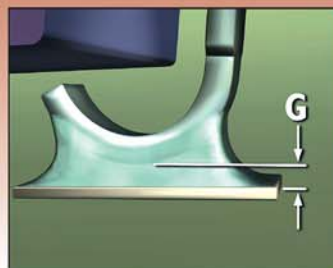
The solder may **not touch** the component body as a **maximum** fillet height.



Heel Fillet Height (F)

The heel fillet must extend at least 50% the thickness of the component lead (**T**)*, as a **minimum** fillet height.

*Including any measurement for solder thickness (G).



Solder Thickness (G)

The **minimum** distance between the land and component lead is **not specified**. Only a properly wetted fillet must be evident.

References:
IPC-A-610F

Association Connecting Electronics Industries



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Target Condition

Gull Wing Components • Class 2

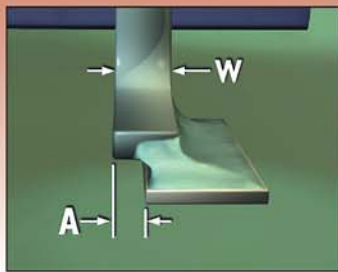


This photo represents a **target** surface mount solder joint for any class of Gull Wing component.

The following illustrations show the **limits** of component misalignment and solder joint size. Solder joints that **do not meet** any of these conditions should be considered **defects**.

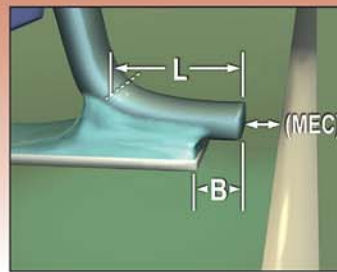
Note: Solder joints are semi-transparent to show the relationship between land and lead.

Acceptability Requirements



Side Overhang (A)

The component lead may overhang the side of the land a **maximum** of 50% of the width of the lead (**W**), or 0.5 mm, whichever is less.



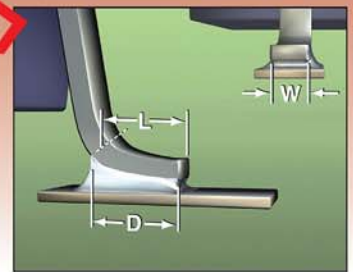
Toe Overhang (B)

If foot length (**L**) is greater than 3 lead widths (**W**), then the tip of the lead extending over the edge of the land **must not** violate minimum electrical clearance (**MEC**) as a **maximum** condition. If (**L**) is less than 3 (**W**), any amount of toe overhang is a **defect**.



End Joint Width (C)

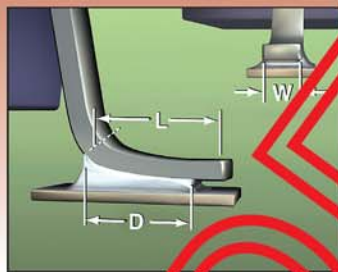
The width of the solder joint at its narrowest point needs to be at least 50% the lead width (**W**), as a **minimum** requirement.



Side Joint Length (D)

Short Foot—If foot length (**L**) is less than 3 (**W**), then **minimum** (**D**) is 100% (**L**).

Acceptability Requirements



Side Joint Length (D)

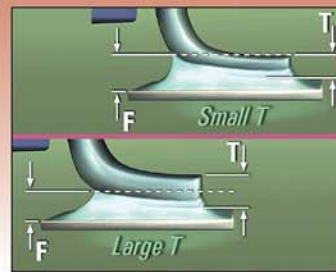
Long Foot—When foot length (**L**) is equal to or greater than three lead widths (**W**), side joint length (**D**) must be a **minimum** of 3 (**W**) or 75% (**L**), whichever is longer.



Heel Fillet Height (E)

Solder may extend to the top bend of the lead, or knee, but **not touch** the component body or end seal as a **maximum** fillet height.

Note: Solder may touch the body of a plastic SOIC (family of components).



Heel Fillet Height (F)

Small T: Where lead thickness (**T**) is 0.4 mm or less, **minimum** heel fillet height is equal to (**T**)*, measured at the toe.

Large T: Where (**T**) is greater than 0.4 mm, Dim. **F** is a **minimum** of 50% (**T**)*.



Solder Thickness (G)

The **minimum** distance between the land and component lead is **not specified**. Only a properly wetted fillet must be evident.

References:
IPC-A-610F