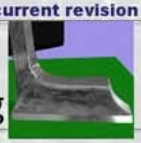
QuickSpec SMT Soldering Compliance Guide

IPC SMT Class Three Specifications

synopsis of select class 3 specifications please see current revision of IPC-A-610 for more details

Spec	DIM	Chip Component 	Gull Wing 	J Lead 	MELF 
Max Side Overhang	A	25% W or P *	25% W or 0.5mm	25% W ***	25% W or P *
End Overhang	B	Not permitted	***	***	Not permitted
Min End Joint Width	C	75%W or P	75% W	75% W	50% W or P *
Min Side Joint Length	D	Wetting	3 W or 75% L ****	150% W	75% R or 75% S*
Max Fillet Height	E	No contact to body	No contact to body	No contact to body	No Contact to Body
Min Fillet Height	F	G+25%H or **	G + T	G + T	G + 25% W or **
Solder Thickness	G	Wetting	Wetting	Wetting	Wetting
Min End Overlap	J	required			75% R

W= width of lead P= width of pad wetting = evidence of wetting must be visible H= height of lead R= depth of termination S = pad depth T= thickness of lead

* which ever is less and does not violate min electrical clearance

** G + 1 mm whichever is less

*** Does not violate minimum electrical clearance

**** see spec for more details

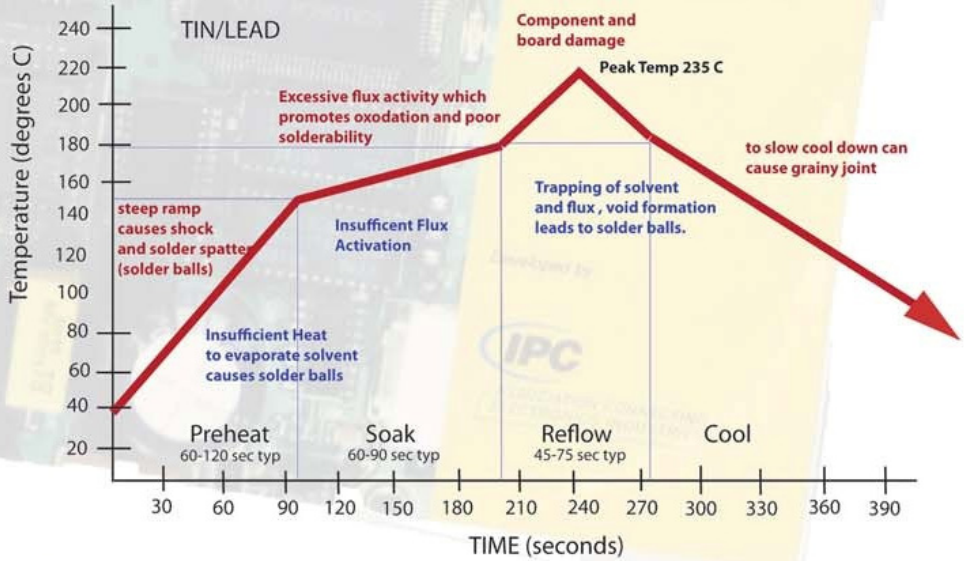
ESD Made Easy

ANSI/ESD S20.20 is the electronics industry`s benchmark for eliminating ESD related failures. It has three main principals and if you follow them you will eliminate the majority of your ESD related concerns.

1) **The operator, the work surface, and the ESDS device must always be at the same electrical potential. As a result, ESDS devices must only be handled at a properly grounded dissipative work surface and the operator must also be grounded. The work surface must be free of static producing insulators.**

2) **Any ESDS device must be stored or transported in a static shielding container, thus producing a "faraday cage".**

3) **If a necessary insulator is required in the ESD safe area, ionization must be used to eliminate the harmful static field.**



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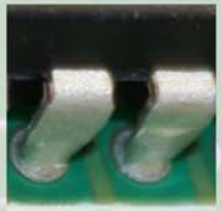
SolderSpec PTH Soldering Compliance Guide

IPC Class Three Specifications

Synopsis of select class 3 specifications. Please see current revision of IPC-A-610 for more details.

Vertical Fill: Minimum of 75% fill
Maximum 25% total depression including both primary and secondary sides is permitted

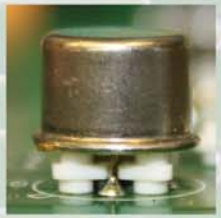
Primary side wettng of lead and barrell: 270 deg



Primary side land covered with wetted solder: 0

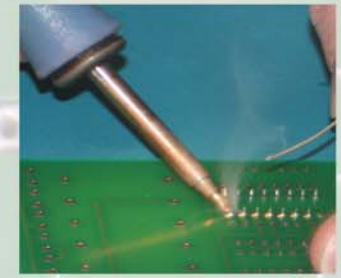
Secondary side fillet and wetting of lead and barrel: 330 deg

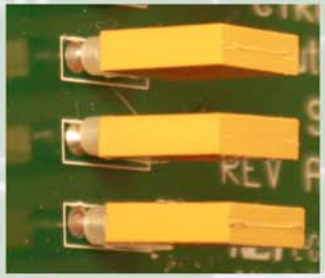
Secondary side land area covered with wetted solder: 75%

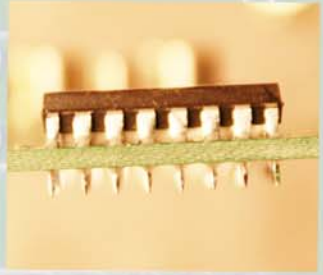


Lead Protrution
Minimum: lead discernable in solder
Maximum: 1.5mm (0.0591 in)

Lead cutting after soldering:
100% visual inspection at 10x or reflow solder joint







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QuickSpec Terminal Soldering Compliance Guide

IPC Class Three Specifications

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Circuit Technology

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All Terminals

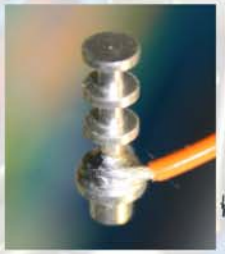
- Solder fillet min 75% of wire/lead and teminal interface
- Solder height greater than 50% wire diameter
- Wire/lead discernable in solder joint
- Wires are mechanically secure before soldering
- Solder wetted min 75% of contact area if wrap180 deg or more
- Solder wetted 100% for wraps less than 180 deg

Turrett

- wire wrapped a min 180 deg and not overlap itself
- wire end can not overlap itself

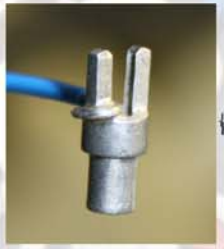
Hook

- Wires wrapped at least 180 deg
- No overlap of wire turns
- Min 1 wire diamter from end of hook to the closest wire



Bifurcated

- Side Mount
  - Wire passes through slot and makes positive contact with at least one corner post & no portion of wire above top of terminal
  - Wire wrap at least 90 deg
- Bottom and Top Mount
  - Wire insulation can not enter base
  - Bottom route contacts 2 parallel sides of post
  - Wire against base of terminal
  - Top route has space filled with filler wire



Cup

- Wire inserted full depth of cup
- Wire in contact with back wall
- Wire not modified to fit connector
- Multiple conductors not twisted together
- Thin film of solder on outside of cup
- Solder fill 75% or more
- Solder buildup on outside cup does not affect form fit or function

Pierced/perforated/punched

- Wire passes through eye
- Wire wrapped to contact opposite side

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