Troubleshooting Tips: Guidelines for Returns

Presented by: Marc Kracklauer

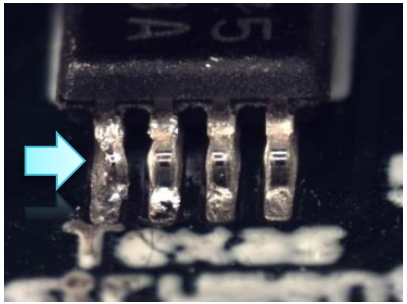
Return guidelines overview

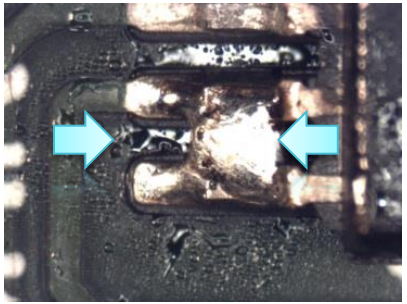
Five key steps for returns

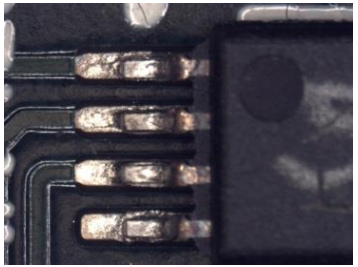
- Carefully de-solder the TI product from the Printed Circuit Board (PCB)
- Verify and confirm issue on suspect TI product
- Return TI products in testable conditions
- Create your return request on ti.com
- Affix and return the TI product in proper container

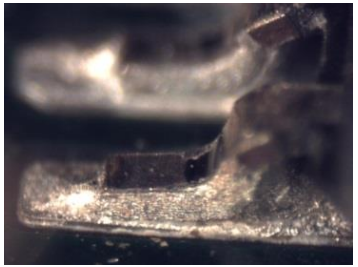
Verify and confirm issue on suspect TI product

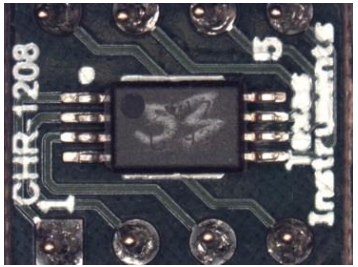
- A thorough visual inspection should be performed prior starting the A-B-A swap
- A visual inspection improves the detection rate of hidden anomalies which may be overlooked, e.g.
  - Bent leads/ lifted leads
  - Solder bridges
  - Flux contamination
  - Damaged traces
  - IC orientation
- Key inspection areas are
  - Leads/ footprints
  - Surrounding circuitry
  - Connected traces











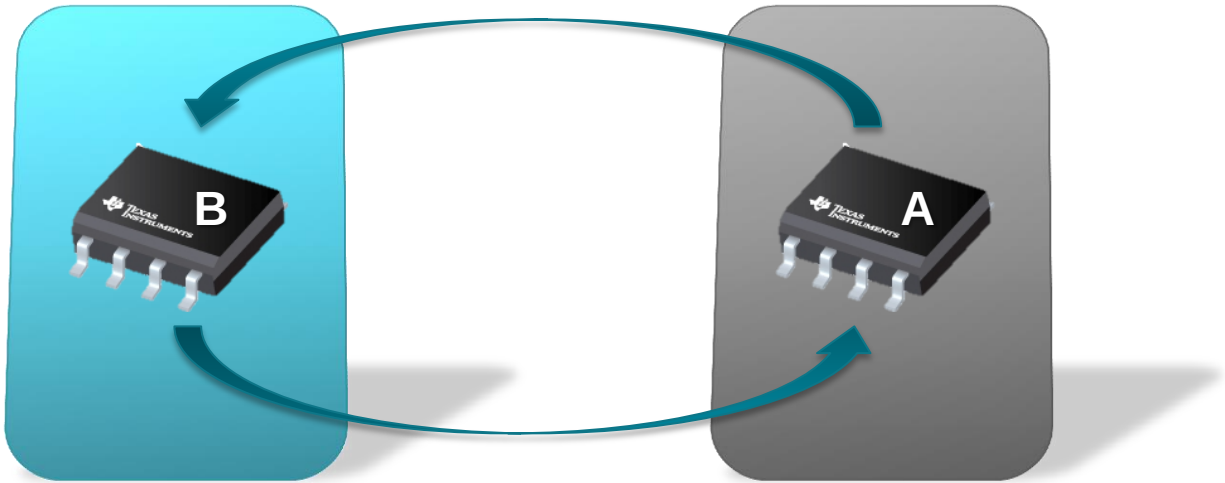
Verify and confirm issue on suspect TI product

Key benefits of the A-B-A swap

- Applies to troubleshooting both complex and simplistic electronic applications
- Detects assembly anomalies as e.g. solder bridges, excess soldered flux, cold solder joints and bent leads.
- Confirms that the TI product causes the issue on the application

Verify and confirm issue on suspect TI product

1) Remove the suspect TI product (A) and a known good TI product (B) from their boards.
2) Replace the suspect TI product (A) with a known good TI product (B).
3) Mount the suspect TI product (A) to a known good board.



Failing board

Known good board

More information on ti.com

TI Quality, Reliability & Packaging

- **TI's quality and reliability processes**
  ti.com/quality
- **Customer product returns**
  ti.com/returns
- **Troubleshooting tips**
  - Portal for Customer Product Returns
  - ESD Handling Guidelines

  ti.com/troubleshooting
- **SMT & packaging application notes**
  ti.com/support-packaging/packaging-resources/SMT-and-application-notes.html

Application

- **E2E support forum**
  ti.com/e2e
- **TI Precision Labs**
  ti.com/PrecisionLabs