

## Inspection Method Sheet

**Part Number: Generic**  
**Drawing Number: Generic**  
**Page: 1 of 4**  
**Doc #: TT-PC-0193 Rev. 9**

**Part Name: Coaxial Resonators**  
**Operation: In Process / Final**  
**Written By: Myra Cope**  
**Date: 01/14/08**  
**Approved by: Stacey Clayton**

**Applicable customer specifications take precedence over this procedure (reference customer drawing).**

### 1) Chips, Voids, and Burrs:

Inspect for chips, voids, and burrs per:

**SM (2mm) & MP (3 mm):**

0.5mm any direction, 0.5mm deep

**LP (4mm) & LS (4mm):**

1 mm any direction, 0.5mm deep

**SP (6mm):**

1.5mm any direction, 0.5mm deep

**EP (8mm):**

1.5mm any direction, 0.5mm deep

**HP (12mm):**

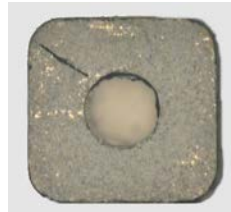
2mm any direction, 1mm deep



- **Method:** Visual inspection under a 4x. Verify with Inspection Card (ref TT-PC-0718) and/or under a 10x magnification
- **Sampling Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

### 2) Cracks:

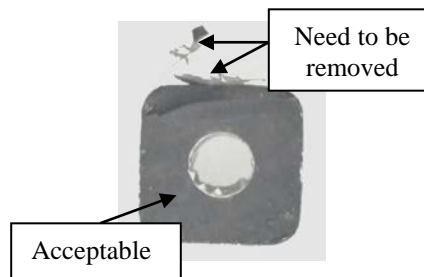
Inspect the resonator for internal cracking. Note photo for typical failure modes.



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- **Sampling Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

### 3) Silver Peeling / Flashing:

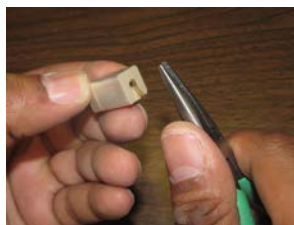
Inspect the resonators for silver which may detach from the body of the resonator.



- **Method:** Visual inspection under a 4x. Verify with Inspection Card (ref TT-PC-0718) and/or under a 10x magnification
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### 4) Tab Pull Test:

Perform pull test per TT-PC-0196 Coax Pull test.



- **Method:** Pliers as referenced
- **Sample Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

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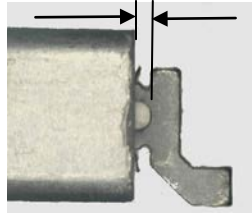
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### 5) Tab Protrusion:

Tab must be seated properly and not protruding from opposite end. The dimension cannot be greater than 0.005”.



- **Method:** Visual inspection under a 4x. Verify with 0.005” shim and/or under a 10x magnification
- **Sampling Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

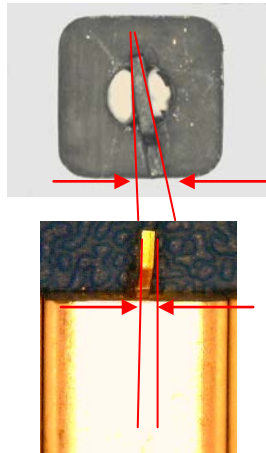
### 6) Tab Position:

#### Tab Rotation:

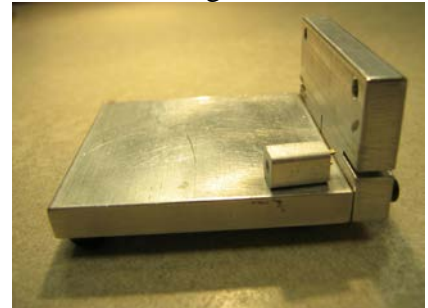
Measuring from the center of the tab to the outside of the tab. Tab cannot rotate more than  $\pm 0.015^\circ$

#### Bent Tabs:

Measuring from the center of the tab to the outside of the tab. Tab cannot bend more than  $\pm 0.015^\circ$



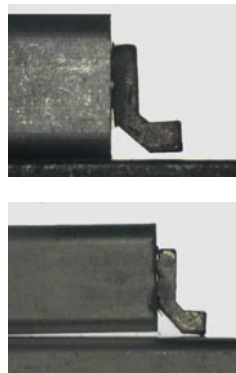
- **Method:** Using Test Fixture



- **Sample Size:** 30 pcs every 30 min.

### 7) Coplanarity:

Inspect resonator and tab for coplanarity. The maximum allowed in either direction is 0.005”.



- **Method:** Use a 0.005” shim
- **Sampling Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

### 8) Electrical Test:

Perform test per TT-PC-0212, Testing Ceramic Coaxial Resonators, for Frequency and Q using the Trans-Tech Test Program.



- **Method:** Network or Spectrum Analyzer as referenced
- **Sampling Size:** 1.0 AQL using TT-PC-0245. C=0 Sampling Plan

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### 9) Tarnish and Corrosion:

Resonators and leads shall be visually inspected for discoloration or tarnishing effects as a failure mode.



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### 10) Silver Chips/ Resonator One Ends:

**On Edge and/or Face reject if Larger than:**

**SM (2mm) & MP (3 mm):**

0.5mm any direction

**LP (4mm) & LS (4mm):**

1 mm any direction

**SP (6mm):**

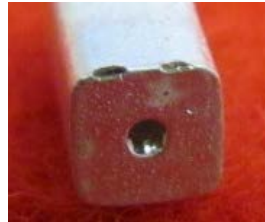
1.5mm any direction

**EP (8mm):**

1.5mm any direction

**HP (12mm):**

2mm any direction



- **Method:** Visual inspection under a 4x. Verify with Inspection Card (ref TT-PC-0718) and/or 10x magnification
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### 11) Solder on OD of Resonator:

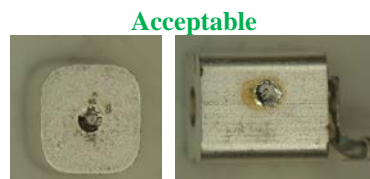
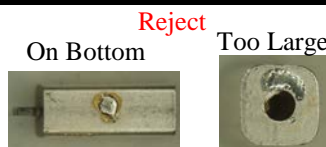
Reject if Solder is Larger than:

SM & MP: 1.0mm any direction,

LP & LS: 1.5 mm any direction

SP, EP & HP: 2 mm any direction

**No Solder allowed on bottom of resonator**



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### 12) Tab Burrs:

All tab burrs that are more than 1/2 the distance between ID to OD shall be rejected or remove



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### 13) Cleaning Criteria:

*Note: TTI uses a No-Clean Solder when assembling.*

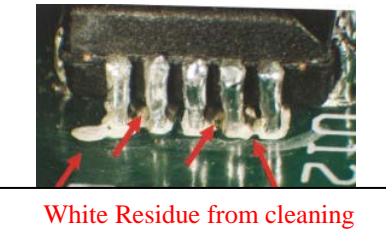
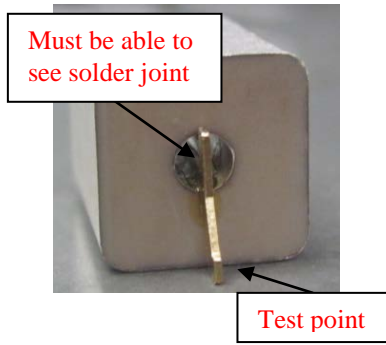
Flux residues from no-clean processes may be allowed.

#### Parts need to be clean if:

- Flux residue inhibits visual inspection  
(Ref. IPC-A610 Section 10.4.4)
- Flux residue inhibits access to test point  
(Ref. IPC-A610 Section 10.4.4)

#### If parts have been cleaned:

White residues resulting from no-clean flux are acceptable as long as they meet the criteria listed above.



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