Trans-Tech
Ceramic Enabled Solutions

RF Components Frequently Asked Questions

Coaxial Resonators and/or Inductors

1. **Tab Material** - Cu Alloy plated with Au & Ni under layer
2. **Type of solder used** - Sn95/Ag5 reflowed between 240 -260 C

Customer Reflow Information	Coax
Reflow peak temperature	260 C Max
Maximum time at peak temperature	3 seconds
Maximum # of Reflow Cycles	3

3. **Moisture Sensitivity Level (MSL)** and **Electrical Sensitive Devices (ESD)** information:

MSL & ESD:

Item	MSL	ESDS (HBM)
Coax Resonators	Level 1	3B

Trans-Tech does not test ESDS or MSL for Trans-Tech components, therefore, no supporting evidence exists for ESDS or MSL levels.

All our resonators are solid, pore–free, ceramics that do not absorb moisture and are not affected by electrical discharge.

(***Reference Standard IPC.JEDEC J-STD-20 MSL Classifications***)

4. **Electrical Testing** –
   a. **Coaxial Resonators**: Critically Coupled, S11 Reflection, and measured to 1% AQL test level
   b. **Inductors**: Inductors are S21 direct coupled measured to 2% tolerance
5. **ROHS elements and PPM levels**: COAX RoHS Summary
6. **Silver Tarnish:** occurs naturally and can be minimized with silver saver packaging. Tarnish does not affect electrical performance.
7. **Standard Electronic cleaning methods** should be used. During ultrasonic cleaning avoid using high power due to potential component damage.

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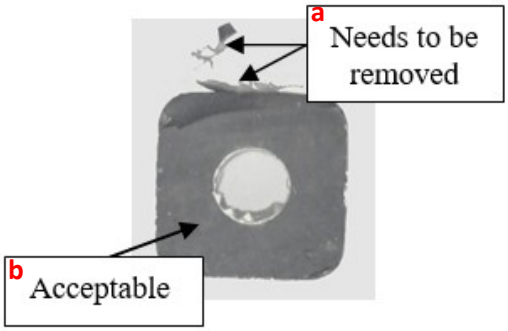
8. **Silver Peeling/Flashing:** Flashing occurs when a thin layer of silver plating is left behind during the slicing and one end-spay operation. *Reference TT-PC-0193 IMS In Process/Final Coaxial Resonators*



   a. Loose material – needs to be removed

   b. Material attached – Is Acceptable. Attached Flashing does not affect form, fit and function of the resonator.

9. **Soldering Coax Resonators** – A silver bearing solder must be used when soldering to silver on resonator. Non-silver bearing solders will leach silver from resonator surface.

Filters

1. **PCB** - Standard FR4 or other PCB material required to meet Filter Specs
2. **Inspection Standards:**
   a. PCB Filters (TT-PC-0378 PCB Filters)
   b. 6mm Filters (TT-PC-0539 6mm Filters)
3. **Customer Reflow Profile** -

Customer Reflow Information	Filters
Reflow peak temperature	260 C Max
Maximum time at peak temperature	3 seconds
Maximum # of Reflow Cycles	2

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4. **Moisture Sensitivity Level (MSL)** and **Electrical Sensitive Devices (ESD)** information:

MSL & ESD:

Item	MSL	ESDS (HBM)
PCB Filter	Level 1	3B

Trans-Tech does not test ESDS or MSL for Trans-Tech components, therefore no supporting evidence exists for ESDS or MSL levels

All our resonators are solid, pore–free, ceramics that do not absorb moisture and are not affected by electrical discharge. PCB may absorb moisture depending on storage conditions. Store filter to prevent filter PCB from absorbing moisture.

(***Reference Standard IPC.JEDEC J-STD-20 MSL Classifications***)

5. **Electrical Testing** - Calibrated Network Analyzer Tuned to 50 ohm match
6. **Tuning marks (Grinding)** - Material removed from resonators (by grinding) to tune filter to electrical specifications.
7. **Standard Electronic cleaning methods** should be used. During ultrasonic cleaning avoid using high power due to potential component damage.

RoHS and REACH Certificates Are Available

Submit request to Sales@trans-techinc.com

Storage Conditions

	Coaxial Resonator and Inductors	Filters
Recommended Temperature Range	5 to 40 ºC	-55 to + 100 ºC
Recommended Humidity Range	20 to 70% RH	20 to 70% RH

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