Heraeus

Technical Data Sheet



Product Type: Conductors Product Name: C7403C / C7404C



Lead Free Thick Copper Conductor System

Description

C7403C/C7404C is a lead free, ENIG plateable, wire bondable copper conductor system developed for applying thick layers of copper. It is optimized for 96% alumina. It is intended for use where cost sensitive applications involving high thermal and electrical properties are required.

C7403C/C7404C are applied by screen printing, dried in air and fired in a nitrogen atmosphere. C7403C is applied by printing as the base layer. C7404C is printed on top of C7403C to build up to optimal thicknesses.

Key Benefits

- Free of lead, cadmium and nickel
- Compatible with Al₂O₃
- Excellent electrical and thermal properties
- Excellent fired film density
- High fired film thickness (up to 300 μm)
- ENIG and ENEPIG plateable
- Wire bondable thick AI wire

Recommended Processing Guidelines

Processing Sequence:

- 1) Print C7403C base layer, dry, fire
- 2) Print and dry 2 additional layers of C7403C, co-fire
- Overprint with subsequent layers of C7404C where increased thickness is needed, dry and co-fire

Drying

120 °C for 10 minutes

Firing Profile

Fire in Nitrogen with O_2 between 2 - 10 ppm 890 °C peak Dwell time of 8 - 10 minutes

Thinner

RV-507

Warranty

Material guaranteed to meet specifications for 3 months from date of shipment

Storage:

Store in a dry location at 15 – 25 °C. **DO NOT REFRIGERATE.**

Allow paste to come to room temperature prior to opening. Materials should be mixed thoroughly before using, as settling may occur during storage.

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Typical Properties

Resistivity: $< 0.8 \text{ m}\Omega/\Box$ at 50 µm fired film thickness

Solderability:

SAC 305 at 240 – 250 °C 5 sec. dip, RMA flux ≥ 95 %

Adhesion:

80 x 80 mil pad SAC 305 at 240 °C RMA flux Initial: \geq 4.0 lbs (> 20 N) Aged: \geq 4.0 lbs (> 20 N) (48hrs at 150 °C)

Viscosity:

C7403C: 150 – 250 Kcps C7404C: 150 – 250 Kcps Brookfield HBT, SC4 – 14 at 10 rpm, 25 °C

Coverage:

45 cm²/g at 30 μm fired film thickness

Solids:

C7403C 89.5 ± 1.5 %

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