

Technical Data Sheet

THICK FILM MATERIALS

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

- REACH³ and ROHS⁴ compliant
- 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 Al wire

Typical Properties

Resistivity:

< 0.8 mΩ/□ 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: ≥ 4.0 lbs (> 20 N)
Aged: ≥ 4.0 lbs (> 20 N) (48hrs at 150 °C)

Viscosity:

C7403C: 150 – 250 Kcps
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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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Recommended Processing Guidelines

Processing Sequence:

- 1) Print C7403C base layer, dry, fire
- 2) Print and dry 2 additional layers of C7403C, co-fire
- 3) 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 O₂ 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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Legend:

1) REACH compliant according to the latest ** Annex XIV to Regulation (EC) of the European Parliament and of the council on the Registration, Evaluation, Authorisation and Restriction of Chemicals ("REACH") by European Chemicals Agency and its subsequent amendments; the material does not contain any substance listed in Annex XIV.

2) RoHS compliant according to the latest ** Directives (European Union) of Restriction of Hazardous Substances ("RoHS") and its subsequent amendments (including the exceptions related to Pb)

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