

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

- 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

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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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 %

Heraeus Electronics

Heraeus Deutschland GmbH & Co. KG
Heraeusstraße 12 – 14
63450 Hanau, Germany
www.heraeus-electronics.com

Americas

Phone +1 610 825 6050
electronics.americas@heraeus.com

China

Phone +86 53 5815 9601
electronics.china@heraeus.com

Asia Pacific

Phone +65 6571 7649
electronics.apac@heraeus.com

Europe, Middle East and Africa

Phone +49 6181 35 4370
electronics.emea@heraeus.com