

Technical Data Sheet

THICK FILM MATERIALS

Product Type: Conductors

Product Name: C 8717E



Thick Print Silver Conductor

Description

C 8717E is a lead free pure Ag conductor that yields a smooth, dense film on alumina. The material was designed for thick print applications and a fired film thickness can be achieved up to 200 µm.

C 8717E is recommended for power hybrid applications where high current is a requirement. C 8717E is an excellent choice for high conductivity applications that require very thick conductor tracks.

Key Benefits

- Excellent fired film density
- Low resistivity, excellent solderability
- Al thick wire bondable
- High adhesion on alumina
- Free of lead, cadmium, nickel and phthalate
- RoHS⁴ and REACH⁵ compliant

Processing

- 1) Spatulate well prior to processing.

When stored in a refrigerator, allow paste to come to room temperature prior to opening, to avoid condensation.

- 2) Print through an 80 – 105 mesh stainless steel screen.
- 3) Level at room temperature for 5 – 10 minutes.
- 4) Dry at 150 °C for 10 – 20 minutes.
- 5) Fire at 850 °C (peak) for 10 – 12 minutes, and with a total firing cycle time of c. 30 – 60 minutes.

Thinner

HVS 507

Typical Properties (Pastes)

Form	Pseudoplastic paste
Viscosity	45 – 70 Pas (25 °C, D = 75/s)
Solids	91.0 % ± 1.5 %
Coverage	Approx. 20 cm ² /g (FFT: 40 µm)
Shelf Life	6 months from date of shipment with correct storage (in a dry, cool (5 – 25 °C) and dark place with container tightly shut).

Typical Properties (Fired)¹

Fired Film Thickness ² (FFT)	35 – 45 µm
Maximum FFT ³	Approx. 200 µm
Resistivity ²	≤ 1.2 mΩ/□ (at FFT: 40 µm)
Solderability (Sn96/Ag3.5/Cu0.5)	Good ≥ 95 % (245 °C, 5s dip) (assessment acc. DIN 41850-2 E)
Leach Resistance (Sn96/Ag3.5/Cu0.5)	≥ 7 dips (245 °C, 5 s each)
Aged Adhesion (Sn96/Ag3.5/Cu0.5)	≥ 20N (48 hrs, 150 °C)
Al Thick Wire Bondability (Shear Test)	≥ 2000 cN (400µm Al wire H11)

Compatibility

Conductors	Applicable on fired C 1076 SD and C 1076 SD (LPA 609-022)
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Legend:

- 1) Typical property based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon and other contaminant free air (PP-1).
- 2) Measured after printing on alumina with an 80 mesh stainless steel screen; total thickness of screen and emulsion combined was c. 160 µm, and the resultant printed pad was 1000 µm wide.
- 3) This can be achieved using by 400 µm thick metal stencil or e.g. 5 separate prints and firings using by 80 mesh stainless steel screen.
- 4) 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)
- 5) 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.

* See the data sheet issue date (DD/MM/YY) as reference of validity of latest edition which is available on request

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