

Conductors

C 4727 (H)



Silver / Platinum (99:1) Conductor

Description:

C 4727 (H) is a lead, nickel and cadmium free 99:1 silver – platinum conductor, designed for low cost applications. C4727 (H) is a new member of Heraeus' line of lead free conductors with excellent fired film density, high conductivity, good solder leach resistance, excellent solder acceptance and is aluminum wire bondable.

Key Benefits:

- Excellent solderability and leach resistance
- Solderable on alumina and dielectric IP 9117 series
- Compatible with HERAEUS resistors
- Excellent initial and aged adhesion, even after multiple firings
- Inner layer for multilayer applications
- Very good conductivity
- Excellent fired film density
- Aluminum and gold wire bondable
- Via-fill "silver"
- Lead -, cadmium- and nickel-free

Processing:

1. Spatulate well prior to processing. When stored in a fridge: The paste should have acquired room temperature before being opened, to avoid condensation.
2. Print through a 200 – 325 mesh stainless steel screen. Total thickness: 50 – 110 µm.
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. 36 – 60 minutes.

Thinner: HVS 100

Properties (Pastes):

Viscosity:	20 – 40 Pas (25°C, D = 100 s ⁻¹)
Solids:	82.5 % +/- 1.5 %
Printing Speed:	up to 20 cm / s
Coverage:	c. 80 cm ² / g (FFT: 12 µm)
Shelf Life:	6 months with correct storage (5 to 25°C, in a dry place and with the container tightly shut).

Properties (Fired) ¹:

Fired Film Thickness ² :	10 – 15 µm
Resistivity ² :	≤ 3.5 mΩ / □ (FFT: 12 µm)
Solderability: (62Sn / 36Pb / 2Ag)	Good = ≥ 95% (235°C, 5s dip) (assessment acc. DIN 41850-2 E)
Adhesion: (62Sn / 36Pb / 2Ag) Aged ² : (48 hrs, 150°C)	≥ 18 N
Leach Resistance: (62Sn / 36Pb / 2Ag)	≥ 4 dips (235°C, 10s each)

Compatibility:

Dielectrics:	IP 9117 series IP 9227
Resistors:	R 8900 / D / E / ED series R 400 H / L series

- 1 Typical property based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied with dried, hydrocarbon-free and other contaminant-free air (PP-1).
- 2 Measured after printing with a 200 mesh steel screen; screen thickness and emulsion thickness combined was c. 100 µm, and the resultant printed track was 500 µm wide.

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The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

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