CERMET SILVER CONDUCTOR

9912-A

ESL 9912-A is a mixed bonded silver paste particularly developed for chip resistors, consumer hybrid circuits, potentiometers and heater elements. Because of its wide firing temperature range, 9912-A may be processed on a variety of substrates including glass, porcelain enameled steel (PES), alumina, and beryllia. The 9912-A may be protected with ESL 4904 to prevent electrolytic silver migration.

PASTE DATA

RHEOLOGY: Thixotropic, screen printable paste

VISCOSITY:
(Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C) 150±25 Pa·s

SHELF LIFE: (25°C) 6 months

PROCESSING

SCREEN MESH/EMULSION: 325/25 µm

LEVELING TIME: (25°C) 5-10 minutes

DRYING AT 125°C: 10-15 minutes

FIRING RANGE: 625°C-930°C

- alumina: 850°C
- beryllia: 930°C
- Porcelain enameled steel: (in air) 625°C

TIME AT PEAK: 10 minutes

RATE OF ASCENT/DESCENT: 50°C-60°C/minute

SUBSTRATE OF CALIBRATION: 96% alumina

THINNER: ESL 401

9912-A 9810-C

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See Caution and Disclaimer on other side.
TYPICAL PROPERTIES

FIRED THICKNESS: 9-14 µm
APPROXIMATE COVERAGE: 100-125 cm²/gram
RESISTIVITY: ≤ 3.0 mΩ/sq.
PRINTING RESOLUTION: (Line/Space) 200 µm x 200 µm
SOLDER WETTABILITY: (RMA flux, 5 sec. dip, 62 Sn/36 Pb/2 Ag, 220°C±5°C) good - very good
SOLDER LEACH: (No. of 10 sec. dips to double resistance of 0.25 mm wide x 100 mm long conductor) > 6 dips
ADHESION: (90° pull, 2.0 mm x 2.0 mm pads, 62 Sn/36 Pb/2 Ag, 220°C±5°C)
- Initial pull strength: ≥ 65 N ≥ 80 N
- Aged 48 hours at 150°C: ≥ 60 N ≥ 70 N
THERMOSONIC WIRE BOND:
(25 µm Au wire) ≥ 50 N --
ULTRASONIC WIRE BOND:
(25 µm Al wire) Initial: ≥ 8 g --
- Aged 48 hours at 150°C: ≥ 5 g --