



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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CERMET SILVER CONDUCTOR

9912-A Thick Print

Lead and Cadmium-free*

ESL 9912-A Thick Print is a silver conductive material ideally suited to power applications. A total fired print thickness of 160 μm can be achieved by using three separate printing and firing cycles and a 200 stainless steel mesh screen.

PASTE DATA

Rheology:	Thixotropic, screen-printable paste
Viscosity: (Brookfield RVT, 10rpm, ABZ Spindle, 25.5 \pm 0.5 $^{\circ}\text{C}$)	150 \pm 25 Pa.s
Bonding Mechanism:	Mixed-bonded
Shelf Life (20 - 25 $^{\circ}\text{C}$):	6 months

PROCESSING

Screen Mesh, Emulsion:	200 S/S, 25 μm
Levelling Time (at 20$^{\circ}\text{C}$):	5 - 10 min
Drying Time (at 125$^{\circ}\text{C}$):	10 - 15 min
Firing Temperature Range:	850 - 930 $^{\circ}\text{C}$ in air
	Time at peak: 10 min
Total Firing Cycle:	1 hour
Substrate for Calibration:	96% alumina
Thinner:	ESL 401

ESL Europe 9912-A Thick Print 0207-B

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

Fired Thickness: 16.0 ± 2.0 µm
(measured on a 2 mm x 2 mm pad on 96% alumina)

Approximate Coverage: 90 - 100 cm²/g

Resistivity: 1.5 - 2.0 mΩ/□
(measured on a 100 mm x 0.25 mm conductor track)

Printing Resolution: 0.200 mm / 0.200 mm
(line/space)

Solder Wettability: 100%
(RMA Flux, 5 sec. dip)
62Sn/36Pb/2Ag (220°C)

Solder Leach: >6 dips
(No. of 10 sec. dips to double lowest resistance of
100mm x 0.25 mm conductor, 62Sn/36Pb/2Ag, 220°C)

Adhesion:
(90° pull, 2 mm x 2 mm pads, 62Sn/36Pb/2Ag)

Initial pull strength: 7 - 10 kg
Aged 48 hours at 150°C: 6 - 9 kg

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*None of the six substances referred to in the RoHS Directive (2002/95/EC) are used in the formulation of this product.

CAUTION: Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapours emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

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