



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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CERMET SILVER CONDUCTOR

9913

High Conductivity Silver Conductor For Use On Aluminum Nitride, Cadmium-free, Lead-free*

ESL 9913 is a high conductivity silver specially formulated for use on aluminum nitride substrates. This silver conductor exhibits excellent fine line printing capabilities and good solderability.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C)	225±25 Pa·s
BONDING MECHANISM:	Mixed
SHELF LIFE: (at 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 TEMPERATURE/TIME AT PEAK:	850°C/10-12 minutes
TOTAL CYCLE TIME:	60 minutes
SUBSTRATE OF CALIBRATION:	AIN
THINNER:	ESL 401

9913 0606-D

ESL Affiliates

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

FIRED THICKNESS:	11.0 ± 2.5 μm
RESISTIVITY:	≤ 3 mΩ/sq.
PRINTING RESOLUTION: (Line/Space)	125 μm x 125 μm
SOLDER WETTABILITY: (RMA flux, 5 sec. dip, 62 Sn/36 Pb/2 Ag, 220°C±5°C)	good
SOLDER LEACH: (No. of 10 sec. dip to double resistance of 0.25 mm wide x 100 mm long conductor) (62 Sn/36 Pb/2 Ag, 220°C±5°C)	3 dips
ADHESION: (90° pull, 2.0 mm x 2.0 mm pads, 62 Sn/36 Pb/2 Ag)	
Initial pull strength:	> 49 N
Aged 48 hours at 150°C:	> 49 N

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***Complies with RoHS, ELV, WEEE and CHIP 3 EC directives.**

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 vapors 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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