



## ESL ELECTROSCIENCE

CERAMIC TAPES &  
THICK-FILM MATERIALS

416 EAST CHURCH ROAD  
KING OF PRUSSIA, PA 19406-2625, U.S.A

T: 610-272-8000  
F: 610-272-6759

[www.electroscience.com](http://www.electroscience.com)

# CERMET SILVER/PALLADIUM CONDUCTOR

# 9913

ESL 9913 is a high-conductivity silver specially formulated for use on aluminium nitride.

## PASTE DATA

**Rheology:** Thixotropic, screen-printable paste

**Viscosity:**  
(Brookfield RVT, 10rpm,  
ABZ Spindle, 25.5 ± 0.5 °C) 225 ± 25 Pa.s

**Bonding Mechanism:** Mixed-bonded

**Shelf Life (20 - 25 °C):** 6 months

## PROCESSING

**Screen Mesh, Emulsion:** 325 S/S, 25 µm

**Levelling Time (at 20°C):** 5 - 10 min

**Drying Time (at 125°C):** 10 - 15 min

**Firing Temperature:** 850°C  
**Time at peak:** 10 - 12 min

**Rate of Ascent/Descent:** 60 - 100°C/min

**Substrate for Calibration:** AIN

**Thinner:** ESL 401

ESL Europe 9913 9612-A

### ESL Affiliates

ESL Europe (Agmet Ltd) • 8 Commercial Road • Reading • Berkshire • England • RG2 0QZ • Tel: +44 (0) 118 918 2400 • Fax: +44 (0) 118 986 7331 • Sales@ESLEurope.co.uk

ESL Nippon • Sukegawa Bldg. • 6<sup>th</sup> floor • 3-4 Yanagibashi 1-chome • Taito-ku • Tokyo 111, Japan • Tel: +81-3-3864-8521 • Fax: +81-3-3864-9270 • Sales@ESL-Nippon.co.jp

ESL China • Room #1707, Tower A, City Center of Shanghai • 100 Zunyi Road • Shanghai, China 200051 • Tel: +86-21-6237-0336 and 0337 • Fax: +86-21-6237-0338  
ESLChina@eslshanghai.net

See Caution and Disclaimer on other side.

## TYPICAL PROPERTIES

**Fired Thickness:** 11.5 ± 2.5 µm  
(measured on a 2 mm x 2 mm pad on 96% alumina)

**Resistivity:** <2 mΩ/□  
(measured on a 100 mm x 0.25 mm conductor track)

**Printing Resolution:** 0.125 mm / 0.125 mm  
(line/space)

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

**Solder Leach:** 3 dips  
(No. of 10 sec. dips to double lowest resistance of  
100 mm 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: > 5.0 kg  
Aged 48 hours at 150°C: > 5.0 kg

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**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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