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

CERMET SILVER CONDUCTOR 9912-K

Lead, Cadmium and Nickel-Free*

ESL 9912-K is a silver conductor having a wide range of applications, for example chip resistors, consumer hybrids, potentiometers and heaters. Due to the wide firing temperature range, this conductor may be processed onto a variety of substrates including glass, Porcelain Enamelled Steel (PES), alumina and special ceramics. Additionally, 9912-K also exhibits excellent gold wire bondability.

PASTE DATA

Rheology:	Thixotropic, screen-printable paste
Viscosity: (Brookfield RVT, 10rpm, ABZ Spindle, 25.5 ± 0.5 °C)	200 ± 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 Range:	On alumina/beryllia/ceramics:	850 - 930°C in air
	On Porcelain Enamelled Steel (PES):	625°C in air
	Optimum (alumina):	850°C in air
	Optimum (beryllia):	930°C in air
	Time at peak:	10 min
Total Firing Cycle:		1 hour
Substrate for Calibration:		96% alumina
Thinner:		ESL 401

(Note: furnace air must be clean, dry and oil-free)

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. • 6th 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

TYPICAL PROPERTIES

(measurement on alumina after firing at 850°C)

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

Approximate Coverage: 100 - 125 cm²/g

Resistivity:
(measured on a 100 mm x 0.25 mm conductor track at 12.5 µm fired thickness) < 2.5 mΩ/□

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

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

Initial pull strength: (on most ceramic substrates)	> 7.0 kg
Aged 48 hours at 150°C:	> 4.5 kg

Thermosonic Au Wire Bond:
(25 µm wire; bond length 1 mm; 100% wire breaks; on alumina; 850°C firing) > 8 g

Aged Au Wire Bond:
(24 hours at 200°C) > 7 g

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