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CERMET PLATINUM SILVER CONDUCTOR 9513-G

RoHS Compliant*
Excellent Fine-Line Capability

ESL 9513-G is a fine-line printing platinum silver conductor having a wide range of applications, for example chip resistors, consumer hybrids, potentiometers and heaters. It exhibits excellent line resolution printing 75 micrometer wide lines. 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.

PASTE DATA

Rheology:	Thixotropic, screen-printable paste
Viscosity: (Brookfield RVT, 10rpm, ABZ Spindle, 25.5 ± 0.5 °C)	310 ± 20 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)

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TYPICAL PROPERTIES

(measurement on alumina after firing at 850°C)

Fired Thickness: (measured on a 2 mm x 2 mm pad on 96% alumina)	12.5 ± 2.5 µm
Approximate Coverage:	100 - 125 cm²/g
Resistivity: (measured on a 100 mm x 0.25 mm conductor track at 12.5 µm fired thickness)	< 3.0 mΩ/□
Printing Resolution: (line/space)	0.075 mm / 0.075 mm
Solder Wettability: (RMA flux, 5 sec. dip, (62Sn/36Pb/2Ag, 220 °C)	100 %
(RMA flux, 5 sec. dip, (95.5Sn/3.8Ag/0.7Cu, 250 °C)	100 %

Solder Leach:
(No. of 10 sec. dips to double lowest resistance of 100 mm x 0.25 mm conductor)

62Sn/36Pb/2Ag, 220 °C	> 5 dips
95.5Sn/3.8Ag/0.7Cu, 250 °C	2 dips

Adhesion:
(90° pull, 2 mm x 2 mm pads, 62Sn/36Pb/2Ag and 95.5Sn/3.8Ag/0.7Cu)

Initial pull strength: (on most ceramic substrates)	> 7.0 kg
Aged 48 hours at 150°C:	> 6.0 kg

***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.