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CERMET SILVER CONDUCTOR

9912

ESL 9912 is a mixed bonded silver paste developed for general applications for the consumer market. The 9912 can be fired from 625°C on porcelain enameled steel to 930°C on alumina and beryllia. The recommended firing temperature for 96% alumina is 850°C, while for beryllia it is 930°C. This material exhibits excellent adhesion and aged bond retention as well as excellent solderability and solder leach resistance with 62 Sn/36 Pb/2 Ag solder, especially on alumina or beryllia.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C)	200±25 Pa·s
BONDING MECHANISM:	Mixed
SHELF LIFE: (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 RANGE:	625°C-930°C
ALUMINA:	850°C
BERYLLIA:	930°C
TIME AT PEAK:	10-12 minutes
RATE OF ASCENT/DESCENT:	60°C-100°C/minute
SUBSTRATE OF CALIBRATION:	96% alumina
THINNER:	ESL 401

9912 9710-B

ESL Affiliates

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

FIRED THICKNESS:		10-13 μm
APPROXIMATE COVERAGE:		75-100 cm^2/gram
RESISTIVITY:		1-3 $\text{m}\Omega/\text{square}$
PRINTING RESOLUTION:(Line/Space)		250 μm x 250 μm
SOLDER WETTABILITY: (RMA Flux, 5 sec dip, 62 Sn/36 Pb/2 Ag, 220°C± 5°C)		excellent
SOLDER LEACH: (No. of 10 sec dips to double resistance of 0.25 mm wide x 100 mm long conductor) (62 Sn/36 Pb/2 Ag, 220°C± 5°C)		5-8 dips
ADHESION: (90° pull, 2.0 mm x 2.0 mm pads, 62 Sn/36 Pb/2 Ag, 220°C± 5°C)	<u>ALUMINA</u>	<u>BERYLLIA</u>
Initial pull strength:	60-70 N	60-70 N
Aged 48 hours at 150°C	60-70 N	60-70 N
Aged 200 hours at 150°C	50-60 N	50-60 N
ULTRASONIC WIRE BOND: (25 μm Al wire)		11-12 grams
THERMOSONIC WIRE BOND: (25 μm Au wire)		8-10 grams

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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 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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