



ESL ELECTRO-SCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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CERMET PLATINUM / GOLD CONDUCTOR **5837-G**

Cadmium, Lead & Nickel-Free*

ESL 5837-G is a platinum gold conductor that is solderable both on 96% alumina substrates and when fired over 4917 dielectric. The 5837-G can be used in high reliability multilayer circuits where chip carriers are soldered to the top layer. The re-fire capability on alumina is also high. A typical lead and cadmium-free system consists of 8844-G gold conductor, 4917 dielectric and 5837-G. The 5837-G can also be used on beryllia substrates with excellent initial adhesion. However, the aged adhesion is lower than that obtained on 96% alumina substrates. This may be improved by firing at 980°C.

PASTE DATA

Rheology:	Thixotropic, screen-printable paste
Viscosity: (Brookfield RVT, 10rpm, ABZ spindle, 25.5 ± 0.5 °C)	250 ± 25 Pa.s
Bonding Mechanism:	Mixed-bonded
Shelf Life (20 - 25 °C):	6 months

PROCESSING

Screen Mesh, Emulsion:	325 S/S, 20 µm
Levelling Time (at 20°C):	5 - 10 min
Drying Time (at 125°C):	10 -15 min
Firing Temperature Range:	850 - 1000°C in air
	Optimum: 850°C
	Time at peak: 10 min
Total Firing Cycle:	1 hour
Substrate for Calibration:	96% alumina
Thinner:	ESL 401

ESL Europe 5837-G 0602-C

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

Fired Thickness: (measured on a 2 mm x 2 mm pad on 96% alumina)		12.0 ± 2.0 µm
Approximate Coverage:		55 - 70 cm ² /g
Resistivity:		<85 mΩ/□
Printing Resolution: (line / space)		0.125 mm / 0.125 mm
Solder Wettability: (RMA flux, 5 sec. dip, 95.5Sn/3.8Ag/0.7Cu, 250°C)		
	96% alumina over 4917	95 - 100 % 90 - 95 %
Solder Leach: (No. of 10 sec. dips to double minimum resistance of 100 mm x 0.25 mm conductor, 95.5Sn/3.8Ag/0.7Cu, 250°C)		> 6 dips
Adhesion: (90° pull, 2 mm x 2 mm pads, 95.5Sn/3.8Ag/0.7Cu)		
	Initial pull strength:	on 96% alumina >7.0 kg
	Aged 48 hours at 150°C:	on 96% alumina >4.0 kg
	Initial pull strength:	on 4917 >4.0 kg
	Aged 48 hours at 150°C:	on 4917 >3.0 kg

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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 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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