ESL ELECTRO-SCIENCE
CERAMIC TAPES & THICK-FILM MATERIALS
416 EAST CHURCH ROAD
KING OF PRUSSIA, PA 19406-2625 USA
T: 610.272.8000
F: 610.272.6759
www.electroscience.com

MULTILAYER DIELECTRIC COMPOSITION 4913-G

Cadmium-Free, Lead-Free, and Nickel-Free*

Dielectric composition 4913-G is a cadmium-free, lead-free, and nickel-free non porous multilayer dielectric for use on alumina substrates. This dielectric may be used with selected silver or gold based conductors or combinations of these metals.

PASTE DATA

RHEOLOGY:	Thixotropic, screen printable paste
VISCOSITY: (Brookfield RVT, 10 rpm, ABZ spindle, 25.5°C±0.5°C)	250±25 Pa·s
COLOR:	blue
SHELF LIFE: (25°C)	6 months

PROCESSING

SCREEN MESH/EMULSION:	200 or 325/37 μm
LEVELING TIME: (25°C)	5-10 minutes
DRYING AT 125°C:	10-15 minutes
FIRING TEMPERATURE:	850°C
TIME AT PEAK:	10 minutes
RATE OF ASCENT/DESCENT	50°C-60°C/minute
SUBSTRATE FOR CALIBRATION:	96% alumina
THINNER:	ESL 401

ESL Affiliates
ESL China • Rm#1707, Tower A • City Center of Shanghai • 100 Zunyi Road • Shanghai, China 200051Tel: (011-86)-21-62370336 • Fax: (011-86)-21-62370338 • eslchina@eslshanghai.net
ESL Europe • 8 Commercial Road • Reading, Berkshire, England RG2 0QZ • Tel: (011-44)-118-918-2400 • Fax: (011-44)-118-986-7331 • Sales@ESLEurope.co.uk
ESL Nippon • Sukegawa Bldg • 6th floor • 3-4 Yanagibashi 1-chome • Taito-ku • Tokyo 111, Japan • Tel: (011-81)-3-3864-8521 • Fax: (011-81)-3-3864-9270 • Sales@ESL-Nippon.co.jp
See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

FIRED THICKNESS: (at least 2 layers between conductors on 96% alumina)	40-55 μm
DIELECTRIC CONSTANT (K) AT 1 MHz: (25°C)	8-11
DISSIPATION FACTOR AT 1 MHz: (25°C)	< 0.5%
INSULATION RESISTANCE: (at 100 VDC)	≥ 10^{11} Ω
BREAKDOWN VOLTAGE: (at 25°C in air)	≥ 800 V/25 μm
LEAKAGE CURRENT: (In 1M NaCl solution/10 VDC bias/5 minutes)	< 1 μA/cm^2

4913-G 0507-D

*** 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 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.