

ESL ELECTROSCIENCE

CERAMIC TAPES & THICK-FILM MATERIALS

416 EAST CHURCH ROAD KING OF PRUSSIA, PA 19406-2625, U.S.A

www.electroscience.com

CERMET RESISTOR

3414 Series

High Gauge Factor

ESL 3414 Series high gauge factor resistor pastes are specifically designed for piezoresistive applications on alumina or other ceramic membranes or substrates.

PASTE DATA

Rheology: Thixotropic, screen-printable paste Viscosity: (Brookfield RVT, 10 rpm, ABZ spindle, 25.5 ± 0.5 °C) 225 ± 25 Pa.s Shelf Life (20 - 25°C):

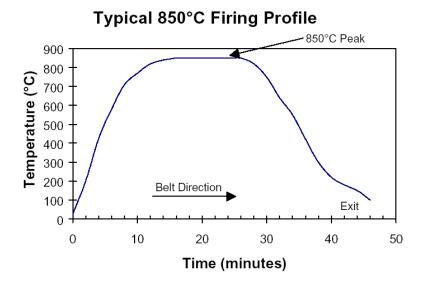
PROCESSING

Screen Mesh, Emulsion: Levelling Time (at 20°C): Drying Time (at 125°C): **Firing Temperature:**

Total Firing Cycle: Substrate for Calibration: Thinner:

6 months

200 S/S, 12.5 µm 5 - 10 min 10 - 12 min 850°C (in air) 10- 12 min Time at peak: 1 hour 9635-A on 96% alumina ESL 401



ESL Europe 3414 Series 0012-F

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TYPICAL PROPERTIES:

Fired Resistor Thickness:	11±1 μm
Resistor Terminations: (Pre-fired)	ESL 8836

	3414-B-LBM	3414-B-HBM	3414-A	3414-B
Sheet Resistivity: ¹ (kΩ/sq.)	1.0 - 1.5	2.5 - 3.0	7.2 - 8.8	3.6 - 4.4
TCR: (in ppm/°C)	±150	±150	±100	±100
Noise Index: ¹	0 dB	3 dB	1 dB	6 dB
Typical Gauge Factor: ²				
Longitudinal:	15 - 16	17 - 18	14 - 15	18 - 19
Transverse:	8 - 9	10 - 11	8 - 10	10 - 12
Nonlinearity:	1%	1%	1%	3%
Hysteresis:	1%	1%	1%	3%

NOTES:

- 1. 1.25 mm x 1.25 mm geometry
- 2. 1.00 mm x 1.00 mm geometry
- 3. Designing resistors with an active length greater than 1.25 mm may minimize the ESD sensitivity.

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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 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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