ESL ELECTRO-SCIENCE
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CERMET RESISTOR 29XXX Series

HOS Heaters on Steel® • COS Circuits on Steel® • TFOS Thick Film on Steel®

Cadmium, Lead and Nickel-free*

ESL 29XXX Series are low value resistors designed for use as heating elements on stainless steel substrates in combination with ESL's insulating dielectrics. They are available in a range of resistivities and temperature coefficients of resistance (TCR) - see Table 1. Intermediate resistivities may be obtained by blending the two members of a TCR group.

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):	6 months

PROCESSING

Screen Mesh, Emulsion:		250 S/S, 5 µm
Levelling Time (at 20°C):		10 - 15 min
Drying Time (at 125°C):		15 min
Firing Temperature Range:		850°C in air
	Optimum:	850°C
	Time at peak:	10 min
Total Firing Cycle:		1 hour
Substrate for Calibration:		ESL 4924 on 96% alumina
Thinner:		ESL 401

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TYPICAL PROPERTIES

Dried Thickness:
(427 mm x 2.4 mm resistor track with 9695 terminations over 4924 dielectric) 21 ± 1 µm

Approximate Coverage: 80 cm² / g

Resistivity & TCR:

Table 1: Resistor Properties

Product Number	29106	29206	29109	29115	29215	29130	29230	29515
Resistivity (mΩ/sq) ± 10%	100	200	100	100	200	100	200	500
TCR (ppm/°C)	600	600	900	1500	1500	3320	3320	1500
TCR Tolerance (ppm/°C)	50	50	50	50	50	50	50	50

***Complies with RoHS, ELV, WEEE and CHIP 3 EC directives.**