CERMET PLATINUM CONDUCTOR

5545-LS

For Heating Elements

ESL 5545-LS is a screen printable, fritted platinum conductor designed for use as a heating element. This material is thin printing and has TCR characteristics approaching that of bulk platinum. The TCR is the most positive when the material is fired at 1300°C. Customers who fire in the range of 850°C to 1300°C obtain excellent performance on prefired ceramics.

PASTE DATA

RHEOLOGY: Thixotropic, screen printable paste

VISCOSITY:
(Brookfield HBT Cone/Plate Viscometer, at 38.4 sec⁻¹, 23°C±0.2°C) 60-90 Pa·s

BONDING MECHANISM: Fritted

SHELF LIFE: 6 months

PROCESSING

SCREEN MESH/EMULSION: 325/25 µm

LEVELING TIME: 5-10 minutes

DRYING: 10-15 minutes, 90°C-125°C

DRIED THICKNESS: 9±3 µm

FIRING RANGE: 850°C-1300°C

CALIBRATION: 850°C

TIME AT PEAK: 10-12 minutes

SUBSTRATE OF CALIBRATION: 96% alumina
TYPICAL PROPERTIES

RESISTIVITY: (Normalized at 8 µm dried thickness) 300-400 mΩ/square
FIRED THICKNESS: 3.5-4.5 µm
SOLDERED ADHESION: > 50 N (2.5 mm x 2.5 mm pads, 62 Sn/36 Pb/2 Ag solder, on zirconia)
TCR: 3500±200 ppm/°C

Typical 850°C Firing Profile

TCR: 3500±200 ppm/°C