

Resistors

9300

Low TCR Resistor Series

Description:

Series 9300 resistors were developed for use in multilayer hybrid circuits. This system provides excellent environmental stability, low firing sensitivity and low TCR's. Resistance values range from 100 ohms/sq up to 100Mohms/sq.

9300 Series ¹ :	9321	9331	9333	9341	9343	9351	9361	9371	9381
Resistivity ² ohms/sq.:	100	1K	3K	10K	30K	100K	1M	10M	100M
Tolerance	±10%	±10%	±10%	±10%	±10%	±10%	±10%	±10%	±10%
TCR ² (ppm/°C)	±25	±25	±25	±25	±25	±25	±25	±25	±25
Short Term Overload Voltage ³ (V/mm)	27	71	125	205	275	470	775	1200	600
Standard Working Voltage ⁴ (V/mm)	10.8	28.4	50	82	110	188	310	480	240
Quan Tech Noise ⁵ : (dB)	-29	-18	-13	-13	-16	-6	-1	-	-
ESD ⁶ (2000 V/mm)	0.1%	0.1%	0.2%	0.4%	0.5%	0.3%	0.1%	0.1%	0.1%

Test Conditions:

- Resistor properties based on laboratory tests using recommended processing conditions:
 Termination: 3504 Palladium Silver Conductor pre-fired at 850°C
 Substrate: 96% Alumina.
 Printing: 280 mesh stainless screen, 0.5 mil emulsion thickness.
 Dried thickness: 20-22 microns
 Firing: 30 minute cycle to peak temperature for 850°C for 10 minutes.
- Resistor geometry: 1mm x 1mm
 CTCR: -55°C to +25°C and HTCR: +25°C to +125°C.
- Short Term Overload Voltage: Voltage required (5 second duration) to induce a resistance change of ±0.1% in a 1mm x 1mm resistor at 25°C.
- Standard Working Voltage = 0.4 X Short Term Overload Voltage.
- Resistor geometry: 5mm x 1mm.
- Electrostatic Discharge. Resistance change after two X 2000 volt pulses on a 1mm x 1mm resistor.

Thinner:

RV-372 (Terpineol)

Warranty:

Material guaranteed to meet specifications for 6 months from date of shipment.

Storage:

Store in a dry location at 5°C -25°C.

DO NOT REFRIGERATE.

Allow paste to come to room temperature prior to opening.

Spatulate well before using.

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The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for a particular application.

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