

Resistors

R 8900 D Series

Air-Fired Resistor System

1 Ω / □ - 1 MΩ / □

Calibrated for Use on Top of Multilayer Dielectric IP 9117 series

Typical Fired Resistor Properties **):

R 8900 D Series ^{1) 7)}	R 8911 D	R 8921 D	R 8931 D	R 8935 DL	R 8935 DHN	R 8941 DN	R 8951 D	R 8961 DN
Resistivity ²⁾ [Ω/□]	10 ± 10%	100 ± 10%	1 k ± 10%	5 k ± 10%	5 k ± 10%	10 k ± 10%	100 k ± 10%	1 M ± 10%
Temperature coefficient of resistance ²⁾ TCR [ppm/K]	± 100	± 100	± 100	± 100	± 100	± 100	± 100	± 100
Short term overload voltage ³⁾ STOL [V/mm]	7.5	26	78	-	-	180	415	479
Standard working voltage ⁴⁾ [V/mm]	3	10	31	-	-	72	165	192
Maximum rated power dissipation ⁵⁾ [mW/mm ²]	910	1000	975	-	-	650	280	37
Quan tech noise ⁶⁾ [dB]	-	-25	-19	-	-	-11	-1	-

¹⁾ Processing conditions:

Terminations: Heraeus Silver / Palladium C 1214 D, pre-fired at 850 °C on top of pre-fired multilayer dielectric IP 9117 series

(2 layers, printed with a 200 mesh steel screen; screen thickness and emulsion thickness combined was c.100 μm)

Substrate: 96% alumina (Ceramtec, Rubalit 708 S).

Printing: 200 mesh stainless steel screen with 30 μm emulsion, to a dried thickness of 25 ± 3 μm (resistivity ≤ 10 Ω: 22 ± 3 μm).

Firing: 60 minute cycle (furnace entry to exit) to a peak temperature of 850 °C for 10 minutes.

²⁾ Shipping specifications: Resistor geometry: 1.5 x 1.5 mm. Temperature coefficient of resistance: -55 °C to +25 °C and +25 °C to +125 °C.

³⁾ Short term overload voltage: Voltage required (5 seconds duration) to induce a resistance change of ± 0.1% in a 1 x 1 mm resistor at 25 °C.

⁴⁾ Standard working voltage: 0.4 x short term overload voltage.

⁵⁾ Maximum rated power dissipation = $\frac{(\text{standard working voltage})^2}{\text{resistance}}$

⁶⁾ Resistor geometry: 1 x 1 mm at power wattage of 0.1 W.

⁷⁾ On request: Available down to 0.5 Ω / □.

**): Typical properties based on laboratory test methods. For optimum results all materials should be fired in a profiled furnace supplied by dried, hydrocarbon-free and other contaminant-free air (PP1).

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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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