R2200 Series

Resistor System

Description

Series R2200 resistor system is a 10 Ω – 1k Ω, has been developed to meet high performance on alumina.

Key Features

- To be used with post-fired plating resistant 600 °C overglaze giving mean tolerance of resistance within ± 10 %
- Compatible with lead free series of Heraeus Ag contained conductors

Typical Fired Resistor Properties[1]

Overglazed R2200 Series[2,5]	R2211 (WP14-23)	R2221 (WP15-05)	R2231 (WP15-23)
Resistivity[3] (Ω/□) with overglaze	10 ± 10 %	100 ± 10 %	1k ± 10 %
Temperature Coefficient of Resistance[4] TCR (ppm/K)	± 100	± 100	± 100
Dried Film Thickness (DFT) (µm)	25 ± 3	17 ± 3	17 ± 3

Legend

1) **Typical properties fired**
Results are 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 (PP-1).

2) **Processing conditions**
Termination: Heraeus lead free silver conductor composition C8729(H), pre-fired at 850 °C;
Substrate: 96 % alumina (Ceramtec, Rubalit 708S);
Printing: 325 mesh stainless steel screen with 30 µm emulsion, to a dried thickness of 17 ± 3 µm;
Firing resistor: 60 minute cycle (furnace entry to exit) to a peak temperature of 850 °C for 10 minutes for R2200 Series
Firing overglaze: See datasheet of IP 9036 A (green).

3) **Shipping specifications**
Resistor geometry: 1.25 mm x 1.25 mm
Post-fired resistor overglaze IP 9036 A (green) at 600 °C:
With double-wet-printing to a fired film thickness of 14 ± 3 µm.
Resistivity: The resistances indicated are the values after separate post-firing of IP 9036A on resistors at 600 °C.

4) **Temperature coefficient of resistance**
-55 °C to +25 °C and +25 °C to +125 °C.

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Typical Properties (Paste)

1) Spatulate well prior to processing.

   When stored in a refrigerator allow paste to come to room temperature prior to opening, to avoid condensation.

2) Print through a 325 mesh stainless steel screen, 30 µm emulsion. Total screen thickness: 70 – 110 µm.

3) Level at room temperature for 5 – 10 minutes.

4) Dry at 150 °C for 10 minutes. Dried film thickness should be 17 ± 3 µm.

5) The electrical performance given in this data sheet refers to a 60 minutes firing cycle, with a peak temperature of 850 °C for 10 minutes.

Thinner

RV 372 or HVS 100

Typical Properties (Paste)

Form	Pseudoplastic paste
Viscosity	20 – 50 Pas (25 °C, D = 100/s)
Coverage	tbd cm^2/g (DFT: 17 µm)
Shelf Life	6 months from date of shipment with correct storage (in a dry, cool (5 – 25 °C) and dark place with container tightly shut).

Compatibility

Conductors	Ag C8729 AgPd C2160B AgPt C4729
Overglaze	IP 9036A

Americas
Phone +1 610 825 6050
electronics.americas@heraeus.com

Asia Pacific
Phone +65 6571 7649
electronics.apac@heraeus.com

China
Phone +86 53 5815 9601
electronics.china@heraeus.com

Europe, Middle East and Africa
Phone +49 6181 35 4370
electronics.emea@heraeus.com

Heraeus Deutschland GmbH & Co.KG4, 63450 Hanau, Germany
Web: www.heraeus-electronics.com

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