RI80 Series

Thick-Film High-Voltage Power Resistors

Rod-type vitreous enamel high-voltage resistors · 1W ~ 1000W · 1Ω ~ 1000GΩ · Non-inductive design

RI80 high-voltage resistors use high-quality 95% alumina ceramic substrates and noble-metal oxide thick-film resistive paste for good heat conduction and high heat capacity. The non-inductive serpentine pattern provides high precision and stability. For load, voltage division, sensing and discharge functions in high- and ultra-high-voltage, high-power electronics without heat sinks.



Product Features

High-alumina body; air cooling, high-temp. voltage withstand

Noble-metal oxide paste: low TCR and wide resistance range

High resistance and voltage beyond wirewound capabilities

Non-inductive thick-film pattern; low capacitance / inductance

Silicone encapsulation; UL-94V0 flame rating

Complies with GB/T5729-2003

Electrical Characteristics

Resistance range	1Ω ~ 1000GΩ
Tolerance	±1%(F) / ±2%(G) / ±5%(J) / ±10%(K)
Power range	1W ~ 1000W
Temperature coefficient	±100 ppm/℃
Insulation resistance	≥ 1 GΩ
Overload power	3 × rated power, 10s
Inductance	≤ 80nH
Distributed capacitance	≤ 100pF
Parallel capacitance	≤ 40pF
Operating temperature	-55°C ~ +225°C
Encapsulation	Silicone, UL-94V0

Typical Applications

HV power supplies	HVDC, laser power supplies, radar modulators
Pulse testing	Lightning surges, capacitor charge/discharge loads
HV measurement	HV dividers, HV probes
Industrial	Electrostatic precipitation, ion implantation, X-rays
Research	Accelerator divider boards, pulse discharge

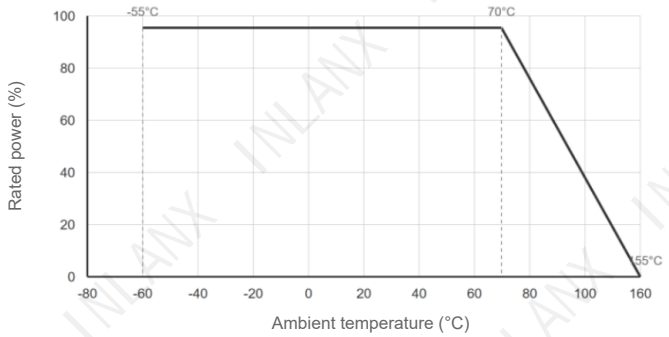
Construction Types

Type a (leads): axial leads, low power

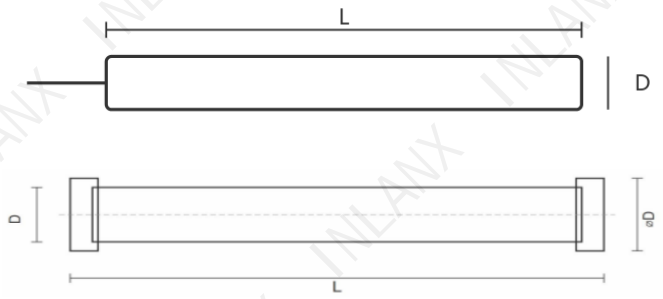
Type b (studs): M4 ~ M10 studs, high power

1000GΩ ultra-high resistance	**1000W high power**	**±100ppm/℃ TCR**	**Non-inductive serpentine design**

Power Derating Curve



Dimensional Drawing



Product Specifications

Model	Rated power (W)	Type	Dimensions (mm)				Resistance range	TCR (×10⁻⁶/℃)	Tolerance (%)	Withstand voltage (kV)
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RI80-1	1	a (leads)	5	21	1	30	1~1000G	±100	±1%(F) ±2%(G) ±5%(J) ±10%(K)	5kV
RI80-2	2		7	25			1~1000G			10kV
RI80-3	3		8	30			1~1000G			15kV
RI80-5	5		9	50			1~1000G			15kV
RI80-8	8		10	70			1~1000G			15kV
RI80-10	10		10	100	1	30	1~1000G			30kV
RI80-10	10	b (studs)	11	78	M4	6	1~1000G			
RI80-15	15	a (leads)	10	150	1	30	1~1000G			
RI80-15	15	b (studs)	10	150	M4	6	1~1000G			
RI80-20	20	b (studs)	18	115	M5		1~1000G			
RI80-30	30		20	120	M5	10	1~1000G			
RI80-50	50		22	130	M6		1~1000G			
RI80-100	100		27	170	M8		1~1000G			35kV
RI80-200	200		27	260	M10		1~1000G			80kV
RI80-300	300		37	310	M10		1~1000G			90kV
RI80-500	500		50	300	M10		1~1000G			100kV
RI80-1000	1000		50	510	M10		1~1000G			120kV

Ordering Guide

Model	Rated power	Nominal resistance	Tolerance	TCR
RI80-100	100W	100MΩ	J	±100ppm/℃

Note: Custom resistance values and dimensions are available. Confirm technical specifications before ordering.