

Metal Glaze Impulse Resistors

Serpentine Pattern Design Achieves High Power Voltage (RI80)

► Preview

The type RI80 precision high voltage resistors were specifically designed for general purpose high voltage systems in industrial.

The RI80 uses Token's proprietary thick film Metal Glaze resistive element and Serpentine Pattern Design which provides ideal cost efficient, stability, precision and high voltage characteristics for a wide range of measurement, voltage divider circuits, and control functions in high voltage power electronics applications.

Token RI80 Precision Voltage Resistors are able to absorb large amounts of energy at high voltage while remaining non-inductive and heavy load characteristics. The RI80 conforms to the RoHS directives and Lead-free. Customized design, and tighter tolerances are available on request.

By utilizing specific ceramic core materials with optimum processing, Token are able to control, very tightly in manufacturing, the important ultra-stable performance parameters in operating temperatures from -55°C to $+70^{\circ}\text{C}$.

Voltage handle up to 35 KV. This unique process is offered in specific resistance values in a wide variety of sizes and terminations. The extraordinary operating stability of the Type RI80 resistors will improve the performance of your high voltage system.

The RI80 Precision Voltage Series is RoHS compliant and lead free. For customized designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact our sales for more information.

► Applications

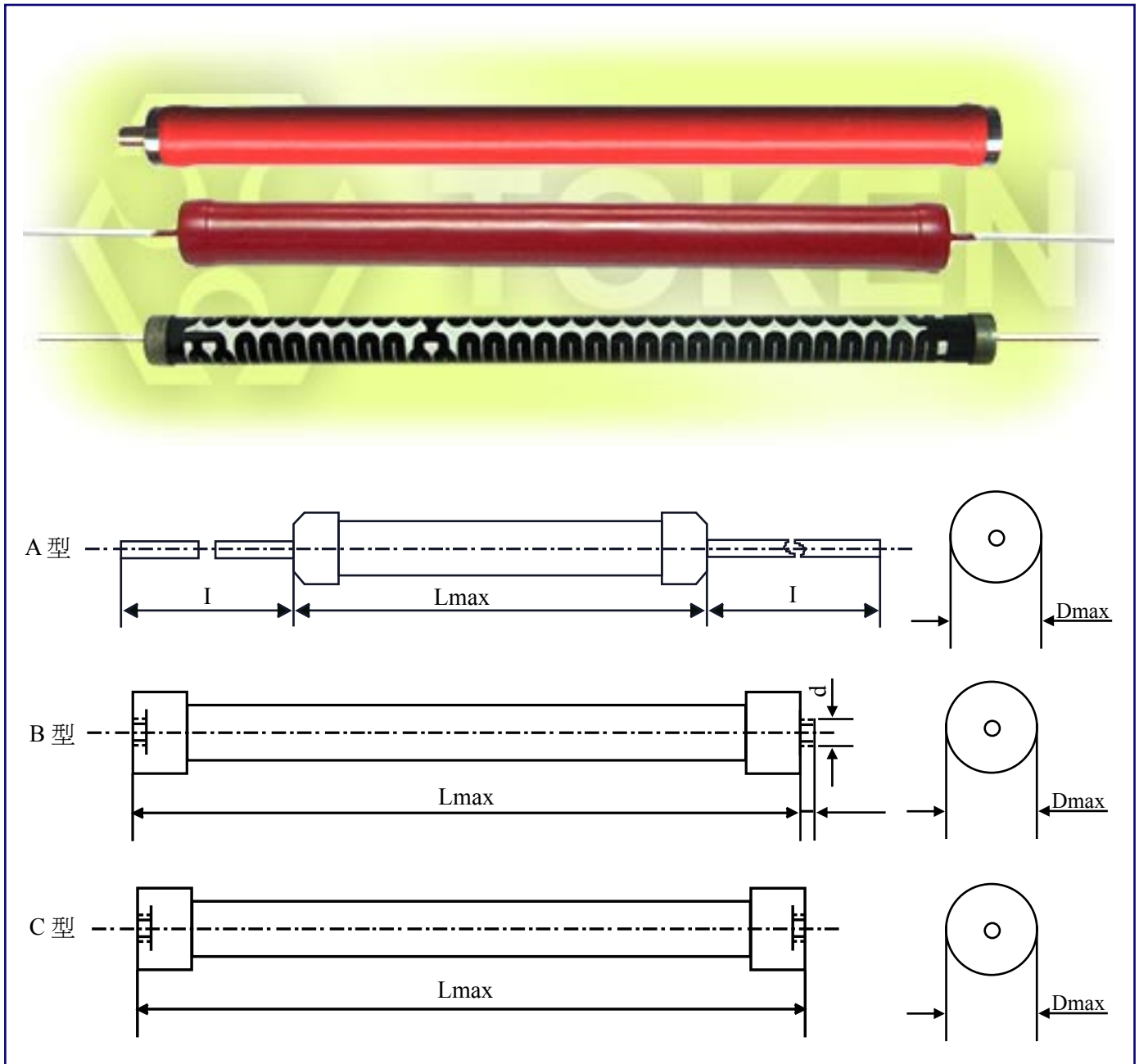
- Impulse voltage generators,
- Arc furnace damping, Energy research,
- Pulse modulators, Radar Pulse-forming networks,
- Capacitor crowbar circuits, High voltage snubber circuits,
- X-ray/imaging equipment, and EMI/lightning suppression.

► Features

- Rated Wattage from 1W to 300W.
- Max Working Voltage from 10KV to 35KV.
- Resistance Tolerance G ($\pm 2\%$), J ($\pm 5\%$), K ($\pm 10\%$).
- Temperature Coefficient: 200 ppm/ $^{\circ}\text{C}$ to 400 ppm/ $^{\circ}\text{C}$.
- High Resistance Range from 1 Megohm to 1,000 Megohms.



► General Specifications (Unit: mm)



Part Number	Rated Wattage	Style	Dimensions				Resistance Range (MΩ)	Temp Coefficient (10 ⁻⁶ /°C)	Max Working Voltage (kv)	Operating Temp	Resistance tolerance
			L max	D max	I	D					
RI80-1	1	a	30±2	9±1	30±3	0.7	10-1000	≤200	10	-55°C ~ +70°C	G(±2%) J(±5%) K(±10%)
RI80-2	2	a	50±2	9±1	30±3	0.7	10-1000	≤200	15		
RI80-3	3	a	65±2	9±1	30±3	0.7	10-1000	≤200	15		
RI80-5	5	a	100±2	9±1	30±3	1	10-1000	≤300	25		
RI80-10	10	b	147±2	11±1	6	M4	10-1000	≤300	30		
RI80-20	20	c	116±2	17±1			10-100	≤400	30		
RI80-25	25	c	116±2	19±1			10-100	≤400	30		

▶ Surface Mount (LRC) Emboss Plastic Tape Specifications

Part Number	Rated Wattage	Style	Dimensions				Resistance Range (M Ω)	Temp Coefficient (10 ⁻⁶ /°C)	Max Working Voltage (kv)	Operating Temp	Resistance tolerance
			L max	D max	I	D					
RI80-30	30	c	116±2	19±1			10-100	≤400	30	-55°C ~ +70°C	G(±2%) J(±5%) K(±10%)
RI80-50	50	c	116±2	21±1			10-100	≤400	30		
RI80-80	80	c	130±2	27±1			10-51	≤400	30		
RI80-100	100	c	160±2	27±1			10-51	≤400	35		
RI80-150	150	c	210±2	27±1			10-51	≤400	35		
RI80-200	200	c	260±2	27±1			10-51	≤400	35		
RI80-300	300	c	310±2	33±1			1-51	≤400	35		

Remark : Rated Continus Working Voltage (RCWW) shall be determined from $RCWW = \sqrt{\text{Power Rating} \times \text{Resistance Value}(\Omega)}$ or Max.Working voltage listed above , whichever two.

▶ RI80 Non-Inductive & Serpentine Pattern - Advance Technique

Non-Inductive Performance:

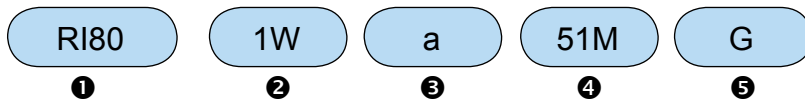
- RI80 Non-Inductive Design which uses a serpentine resistive pattern that offers for zigzagging lines to carry current in opposite directions, thereby achieving maximum neutralization of flux fields over the entire length of the resistor.
- This efficient non-inductive construction without derating of any performance advantages is ideal for applications where high frequency is required.



Serpentine Pattern Screen Printing Design:

- Type RI80 Precision High Voltage Resistors combine Token's Non-Inductive serpentine pattern, high thru-put screen printed silicone coating.
- The alignment of the gap in the serpentine resistor pattern with the gap in the coating pattern provides a complete encapsulation of the resistor element.
- The cap and lead assemblies are pressed onto the resistor core, finishing the resistor and providing rugged terminal attachment.

How to Order



❶ Part Number: RI80

❷ Rated Power (W): 1W, 2W, 3W, 5W, 10W

❸ Style: a Style, b Style, c Style

❹ Resistance Value (Ω)

Code	Resistance Value (Ω)
5M1	5.1M Ω
51M	51M Ω
510M	510M Ω

❺ Resistance Tolerance

Code	Resistance Tolerance
G	$\pm 2\%$
J	$\pm 5\%$
M	$\pm 10\%$

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