Thick Film High Voltage Resistors

An Excellent Solution for The Voltage Trend in Power Impulse Products

Preview

The High Voltage RI82 Precision Series provides an excellent solution for design engineers looking for a compact product with high-voltage capabilities to enable them to design within the voltage trend for power impulse products.



The RI82 resistors use Token's proprietary thick film Metal Glaze resistive element and Serpentine Pattern Design which provides ideal cost efficient, stability, precision, non-Inductive, and high voltage characteristics for a wide range of measurement, voltage divider circuits, and control functions in high voltage power electronics applications.

By utilizing specific 96 % pure alumina materials with optimum processing, Token are able to control, very tightly in manufacturing, the important ultra-stable performance tolerance F(±1%), G(±2%), J(±5%), K(±10%), and M(±20%). Voltage handle up to 30 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 RI82 resistors will improve the performance of your high voltage system in precision.

The Precision RI82 High Voltage Series is RoHS compliant and lead free. For customed designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact our sales for more information.

Applications

- Rated Wattage from 0.1W to 30W
- Max Working Voltage from 2KV to 30KV.
- Designs built from customer supplied schematics
- Tough epoxy-based coating and high voltage stability
- Temperature Coefficient: 200 ppm/°C to 300 ppm/°C.
- Resistance Range from 10 Megohm to 1KK Megohms (1 Gegaohms).
- Resistance Tolerance F(±1%), G(±2%), J(±5%), K(±10%), and M(±20%).
- Stable cermet resistive element bonded to a high-purity alumina substrate.

Applications

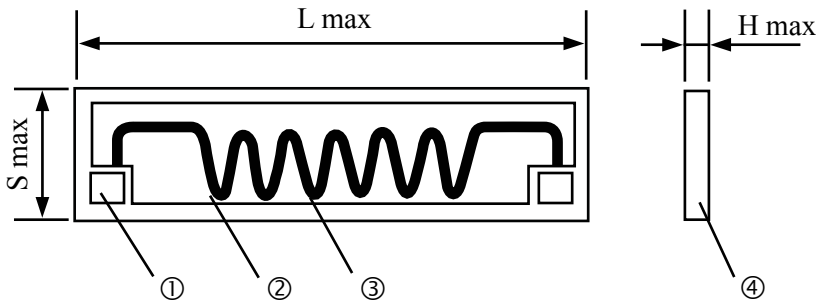
- Resistive Element: Thick film
- Substrate: 96 % pure alumina
- Encapsulation: Epoxy base, conformal coating (c style only)
- Terminals: Silver palladium pole, tin plated copper leads

Features

- X-ray/imaging equipment, Impulse voltage generators,
- Capacitor crowbar circuits, High voltage snubber circuits, Arc furnace damping,
- Pulse modulators, Radar Pulse-forming networks, Energy research, and EMI/lightning supression.
- Applications include power supplies, transformers and any application requiring operation within an environment where high voltages are used.

CHIP Type General Specifications (Unit:mm)

① Silver Palladium Pole
② Resistent Film
③ Insulation Coating
④ 96%A1023 Ceramic Base

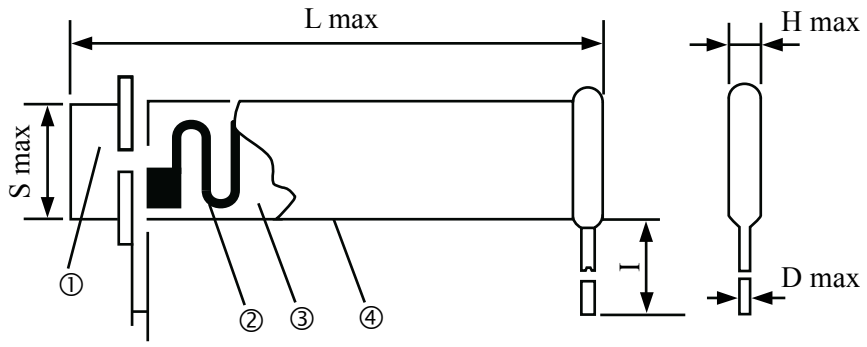


Part Number	Rated Wattage (w)	Style	Dimensions					Resistance Range (MΩ)	Temp Coefficient (10^{-6}/ °C)	Resistance Tolerance	Max Working Voltage (KV)
			Lmax	Smax	Hmax	I	dmax				
RI82-2	2	a	33	8	0.8			10-1000	≤200	J(±5%) K(±10%) M(±20%)	15
RI82-2	2	a	25	10	0.8						

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.

Dip Type General Specification (Unit:mm)

① Silver Palladium Pole
② Resistent Film
③ Insulation Coating (c style only)
④ 96%A1023 Ceramic Base



Part Number	Rated Wattage (w)	Dimensions					Resistance Range (MΩ)	Temp Coefficient (10^{-6}/ °C)	Max Working Voltage (KV)	Resistance Tolerance
		L ± 2	S ± 2	H max	I	D max				
RI82-0.125	0.125	8	3.5	2.5	20.0min	0.56	100-4.7K	≤200	4	
RI82-0.125	0.125	10	5	2.5	24.0min	0.56	100-10K	≤200	4	
RI82-0.25S	0.25S	10	5	2.5	20.0min	0.56	10-1000	≤200	4	
RI82-0.25	0.25	22	4	2.5	20.0min	0.56	100-10K	≤200	4	
RI82-0.25	0.25	25	5	2.5	20.0min	0.56	100-10K	≤200	10	
RI82-0.5	0.5	35	5	2.5	24.0max	0.56	100-10K	≤200	15	
RI82-0.5	0.5	41	5	2.5	42.0max	0.56	100-1KK	≤200	4	F(±1%)
RI82-1	1	25	10	2.5	30.0max	0.56	100-10K	≤200	15	
RI82-1	1	30	8	2.5	30.0max	0.56	100-10K	≤200	15	G(±2%)
RI82-1	1	33	8	2.5	35.0max	0.56	100-10K	≤200	15	
RI82-1	1	38	10	3	45.0max	0.80	10-1000	≤200	20	J(±5%)
RI82-2	2	38	10	3	40.0max	0.80	100-10K	≤200	20	
RI82-2	2	45	10	3	45.0max	0.80	100-10K	≤200	20	K(±10%)
RI82-3	2	50	10	3	45.0max	0.80	100-10K	≤200	20	
RI82-3	3	30	15	3	35.0max	0.80	100-10K	≤200	25	M(±20%)
RI82-3	3	60	10	3	55.0max	0.80	100-100K	≤300	25	
RI82-5	5	80	20	4	60.0max	0.80	100-200	≤300	25	
RI82-10	10	97	23	4	80.0max	0.80	100-200	≤300	30	
RI82-20	20	100	35	4	80.0max	1	100-200	≤300	30	
RI82-30	30	100	48	4	80.0max	1	100-200	≤300	30	

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.

RI82 Non-Inductive & Serpentine Pattern - Advance Technique

Non-Inductive Performance:

1. Token's RI82 Non-Inductive Design which uses a serpentine resistive pattern that offers for zigzag-ging lines to carry current in opposite directions, thereby neutralizing maximum of flux fields over the entire length of the resistor.

2. This efficient non-inductive construction retains performance advantages and heavy load characteris-tics which is ideal for high frequency applications.

Serpentine Pattern Screen Printing Design:

1. Type RI82 Precision High Voltage Resistors combine Token's Non-Inductive serpentine pattern, high thru-put screen printed silicone coating.

2. 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.

3. The lead assemblies are pressed onto the resistor core, finishing the resistor and providing rugged terminal attachment.

How to Order

RI82	0.125W	c	47M	K
❶	❷	❸	❹	❺

❶ Part Number: RI82

❷ Rated Power (W): 0.125W, 0.25W, 0.5W, 1W

❸ Style: a Style, b Style, c Style

❹ Resistance Value (Ω)

Code	Resistance Value (Ω)
4M7	4.7MΩ
47M	47MΩ
47M5	47.5MΩ
470M	470MΩ

❺ Resistance Tolerance

Code	Resistance Tolerance
F	±1%
G	±2%
J	±5%
K	±10%
M	±20%

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