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(RY31A)
High Frequency Resistor

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Product Introduction

A Perfect Choice for High Frequency RF Circuit Designs

Features :

- Special Oxide Film technology
- Speciality product for RF applications
- Low-inductance non-helical trimmed product
- Lead (Pb)-free and RoHS compliant

Applications :

- Telecommunication equipment
- Industrial electronics



RY31A specialty MELF Non-Inductive Resistors combines the advanced pulse load capability and the suitability for RF applications in a single component.

They are the perfect choice in RF high frequency circuit designs where the parasitic inductance of regular, helical trimmed resistors cannot be accepted, but where also pulse energies apply. Typical applications are in the fields of telecommunication equipment and industrial electronics.

RY31A - High Frequency Metal Oxide Film Resistor, with the inner and outer surfaces coated with a special glass, features higher thermal resistance and larger electric power capacity for the compact volume. Unlike conventional wire wound type, the volumetric resistance will provide superior stability versus frequency and excellent durability against transient voltage. RY31A is suitable for the application with large current as well as high frequency circuit.

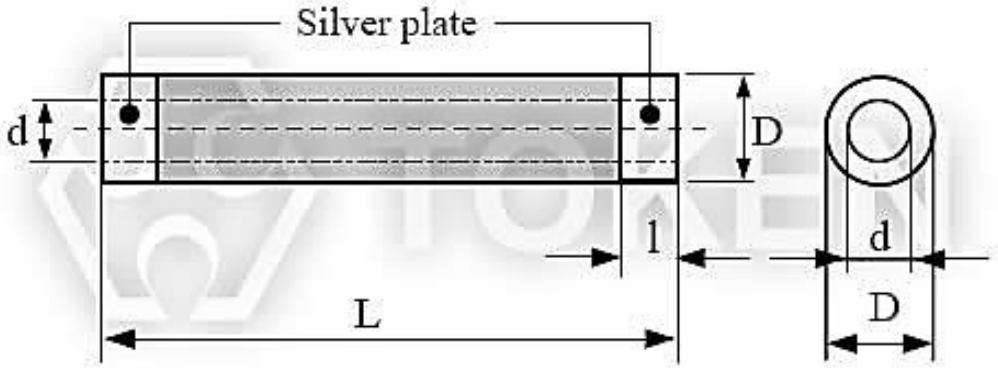
In very low resistance values, between 1.0 and 100 ohm, these are available in rated wattage 10W, 25W, 50W, 100W, and 150W packages.

The High-Frequency RY31A Series is RoHS compliant and lead free. For customed designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact our Sales Office, or link to Token official website "High Voltage Resistors" to get more information.

Electrical Characteristics

Electrical Characteristics (RY31A)

Rated power (W)	T.C.R (PPM/℃)	Resistance range (Ω)	Tolerance (%)	Pulse test voltage (KV)	Ambient Temp.(70℃ Full Power)	D max. (mm)	L max. (mm)	d max. (mm)	l max. (mm)
10	(+20℃ ~+125℃) ±400	50	±5(J) ±10(K)	3.2	-55℃~ +125℃	Φ 15.1	77	Φ 10.7	5±0.5
		75		4					
25		50		5		Φ 25.1	121	Φ17.9	10±1
		70		6.5					
50		50		7.5			162		
		75		8.7					
100		50		11		Φ 35.1	202	Φ23.1	12±1
		75		12.5					
150		50		12.5			302		20+2 20-1
		75		12.5					



RF Non-Inductive (RY31A) Dimensions

- **Note: Request resistance within 1~100Ω, please contact Token Sales.**
- **The resistors with the standard resistance values as showed as above. will be supplied with a shorter delivery.**

Order Codes

Order Codes (RY31A)

RY31A	10W	50R		K	
Part Number	Rated Power (W)	Resistance Value (Ω)		Resistance Tolerance (%)	
RY31A	10W	51R	51Ω	J	±5%
	25W	56R	56Ω	K	±10%
	50W	62R	62Ω		
	100W	68R	68Ω		
	150W	75R	75Ω		

General Information

Cost Effective Complete Selection of High Voltage Components

Token high voltage series can be specified for use in industrial and general purpose high voltage systems, as well as a complete selection of high resistance, Hi-Meg, high-voltage, high frequency, and bulk ceramic resistors for higher average power dissipation. These High Resistance, High Frequency, High Resistance resistors combine the proven performance of Token resistance system with new cost efficient design elements and high voltage applications.

Detailed specifications, both mechanical and electrical, please contact our sales representative for more information.

High Voltage Applications

Resistors produced from Serpentine Pattern Screen Printing Design or bulk ceramic materials have displayed several key advantages in demanding high-voltage situations, including both continuous-wave and pulse applications. These include radar and broadcast transmitters, x-ray systems, defibrillators, lasers, and high-voltage semiconductor process equipment applications, where resistors must handle peak voltage anywhere from 8KV to 75KV.

Typical applications include current limit in capacitor charge/discharge, crowbar, and tube-arc circuits. In these uses, bulk ceramic resistors provide low inductance, high average power per unit size, stability at high voltage, and durability at extreme peak-power levels. Film resistors typically cannot withstand high-voltage pulse applications.

RF/Digital Loads and High-Frequency Applications

Token Non-Inductive Voltage Resistors are used extensively for high-frequency RF loads in broadcast and communication equipment because of their non-inductive characteristics. They provide excellent non-inductive power-handling capacity at frequencies up to the gigahertz range, with no sacrifice in power dissipation.

Film resistors may provide the needed non-inductive characteristics required by such RF applications, but they have size limitations and present reliability problems due to potential film burnout. This is especially true in advanced digital applications such as digital radio and TV transmitters involving pulses at high frequencies.

Application Notes

- Due to the high voltage which can appear between the end cap and any adjacent metal part, resistors should be mounted at an adequate distance from other conductors.
- An appropriate number of resistors may be screwed together as a stick to provide an assembly which will be capable to withstanding any desired voltage, providing no individual resistor is subject to a greater stress or power dissipation than is recommended in its data sheet, and that appropriate anticorona devices are fitted.
- The axial termination should not be bent closer than twice the diameter of the terminal wire from the body of the resistor.
  When resistors are required to be potted, the preferred encapsulant is a silicone compound.

Oil Immersion

For some high voltage applications it is required to immerse the components in oil or gas to reduce the effects of corona and surface tracking. A special lacquer protected version of the resistor is available, suitable for immersion in transformer oil or SF6.