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(RMCA, RMCB) Bulk Ceramic Composition Resistors

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Product Introduction

Non-Inductive Enhanced Performance for High Voltage Ignition Applications.

Features :

- Operating Temperature -40℃ ~ 155℃.
- Resistance Tolerance K(±10%), M(±20%).
- Typical resistance range 470 ohm ~ 100 Kohm.
- Replaces 1 and 2 watt carbon composition resistors.
- Suitable for noise suppressor of engine ignition system.
- High peak power, Reliable with non-disconnection failure.
- Rated Wattage up 5W, meets high energy density demands.

Applications :

- Inrush limiters
- R-C snubber circuits
- Vehicle ignition system
- High voltage power supplies

The RMCA, RMCB Series MELF type of fixed ceramic resistors from Token Electronics offers automotive designers a compact solution for applications involving high voltages, surges, high peak power, or high-energy pulses. They offer enhanced performance in R-C snubber circuits, high voltage power supplies, and inrush limiters.

Token's RMCA, RMCB series now offers the industry a direct replacement carbon composition resistor based on a bulk resistive element comprising carbon in ceramic filler. Due to the need for higher peak voltages, the RMCA, RMCB range is perfect for vehicle ignition system applications.

The RMCA, RMCB Voltage Resistors conform to RoHS compliant and lead free. For customed designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact us, or link to Token official website "High Voltage Resistors" to get more information.

Ceramic Composition Resistor Construction:

- Bulk ceramic resistor that consists of a clay, alumina, and ceramic filler that has been blended and pressurized into a resistive core and then covered with a molded outer insulating core.

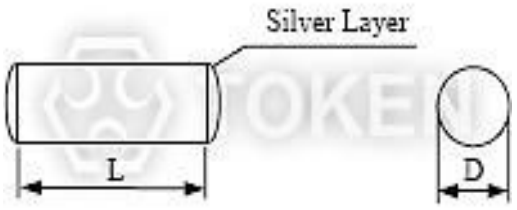
Replacement Carbon-Composition Resistors:

- Design requirements for custom sizes, surface mount, or special footprints can be met easily.
- In cases where several carbon-composition resistors have been used together in an array to achieve a particular rating, they have been replaced with a single bulk ceramic resistor, frequently at a lower installed cost.

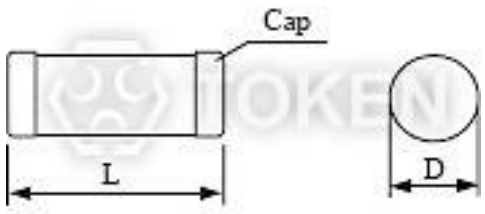
General Specifications

General Specifications (RMCA, RMCB) (Unit: mm)

Model	Style	Rated Wattage	Dimensions (Unit: mm)	
			L	D
RMC	A	1	7 ± 1.5	4.0 ± 0.4
			9 ± 1.5	4.0 ± 0.4
			10 ± 1.5	4.0 ± 0.4
	B		11 ± 1.5	4.6 ± 0.5
	A	2	18 ± 1.5	4.0 ± 0.4
	B		19 ± 1.5	4.6 ± 0.5
	A	3	24 ± 2.0	4.0 ± 0.4
	B		25 ± 2.0	4.6 ± 0.5
	A	5	24 ± 2.0	7.0 ± 0.5
	B		25 ± 2.0	7.6 ± 0.5



Ceramic Composition Resistor (RMC-A) Dimensions



Ceramic Composition Melf (RMC-B) Dimensions

Electrical Characteristics

Electrical Characteristics (RMCA, RMCB)

Item		RMCA, RMCB			
Power Rating at 25℃ (W)		1	2	3	5
Operating Temp. Range (℃)		-40~155			
Resistance Tolerance		K(±10%), M(±20%)			
Resistance Range (Ω)		470~33K	1K~56K	1K~100K	470~33K
Max. Working Voltage (V)		300	350	400	500
T.C.R (PPM/℃)	-40℃~25℃	-750~3300	-750~3300	-750~3300	-750~3300
	25℃~155℃	-750~2600	-750~2600	-750~2600	-750~2600
Max. Pulse Voltage (KV)		8	15	20	25
Moisture Resistance (%)		10	10	10	10

Non-Inductive Performance:

- Chemically inert and thermally stable, the resistors are inherently non-inductive because of their bulk ceramic construction, which allows energy and power to be uniformly distributed through the entire ceramic resistor body with no film or wire to fail.
- The bulk ceramic material also allows simple efficient resistor designs that enable the designer to minimize the resistor package size while providing the required performance and reliability.

Order Codes

Order Codes (RMCA, RMCB)

RMC	2W	a	510R		M	
Part Number	Rated Power (W)	Style	Resistance Value (Ω)		Resistance Tolerance (%)	
RMC	1W	a Style	510R	510Ω	K	±10%
	2W	b Style	5K1	5.1KΩ	M	±20%
	3W		51K	51KΩ		
	5W		68K	68KΩ		

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.