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DIRECT

Electronics Tech.

(RMCD)

High Voltage Bulk Ceramic Resistors

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▶ Product Introduction**Bulk Ceramic Tubular Resistor Offers Higher Energy Power Dissipation & Higher Voltage Withstand.****Features :**

- Peak voltage up to 74 KV, Power (W) up to 100W.
- Typical resistance range 75 ohm ~ 1 Kohm.
- Resistance tolerance K($\pm 10\%$).
- Inductance only 0.4 μ H max.
- Heavy load characteristics.

Applications :

- X-Ray, Lasers, Medical Defibrillators,
- Dynamic Braking, Soft-start/Current-limit,
- Radar, Motor Drives, Broadcast Transmitters,
- Snubber Circuits, Dummy Loads, Energy Research,
- RF Amplifiers, Semiconductor Process, Power Conditioning.

Power High Voltage Dividers and Resistors Type RMCD extend Direct Electronic's advanced proprietary high voltage resistor technology to larger devices than have previously been available on the market.

The RMCD is the bulk non-inductive ceramic tubular resistor. Because of the larger volume of resistive material, these resistors are capable of handling significantly higher pulsed power than their wire wound or metal film counterparts, making them suitable for rapid energy dumping and high energy pulse work.



This RMCD offer higher average power dissipation while retaining the advantages of high surge energy, high voltage withstand, and non-inductance. It is especially useful in RF applications such as transmitters and modulators, where the tube configuration provides more effective convection cooling.

In addition, this RMCD HV resistor and divider provide high peak voltage and power energy combined with extremely high working voltage. These specifications can provide important improvements in performance in many types of advanced electronic systems, including TWT power supplies, radar systems, X-ray systems, analytical equipment and high resolution CRT displays.

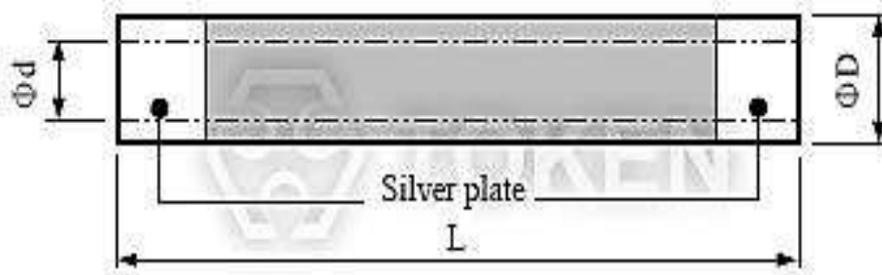
Direct will also produce devices outside these specifications to meet customer requirements, with comprehensive application engineering and design support available for customers worldwide. For complete information on quantity price and delivery, please contact our Sales Office, or link to Direct official website "[High Voltage Resistors](http://www.direct-token.com)" to get more information.



► **General Specifications**

General Specifications (RMCD) (Unit: mm)

Type	Dimensions (Unit: mm)			Resistance (Ω)	Tolerance (%)	Energy (KJ)	Peak Voltage (KV)	Power (W)
	L±3.0	ΦD±2.0	Φd±2.0					
RMCD-100	305	25.4	15.5	75~1K	±10	30	75	100
RMCD-90	250	25.4	15.5			25	60	90
RMCD-70	200	25.4	15.5			20	45	70
RMCD-50	150	25.4	15.5			15	30	50
RMCD-35	100	25.4	15.5			10	15	35



Tubular High Voltage Resistors (RMCD) Dimensions

► **Electrical Characteristics**

Electrical Characteristics (RMCD)

Type	Power Rating	Temperature Coefficient	Resistivity	Specific Heat	Inductance	Density	Max. Operating Temperature
RMCD	35 ~ 100W	-500 ~-1500PPM/°C	5~80Ω·cm	2J/cm ³ ·°C	0.4μH max	2.25g/cm ³	220°C max

Order Codes

Order Codes (RMCD)

RMCD	100W	100R		K		S	B	
Part Number	Rated Power (W)	Resistance Value (Ω)		Resistance Tolerance (%)		Silver plate terminal	Color	
RMCD	35W	82R	82 Ω	K	$\pm 10\%$		B	black
	50W	100R	100 Ω					
	70W	470R	470 Ω					
	90W	820R	820 Ω					
	100W	1K	1K Ω					

► General Information

Cost Effective Complete Selection of High Voltage Components

Direct 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 Direct 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

Direct 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.

