



## High Voltage Resisitors / 高压电阻器

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Notice: Specification Changed or Version Updated will be posted at irregular intervals.  
All Updated and Final Specifications, Please Confirm with TOKEN ELECTRONICS REPRESENTATIVES.



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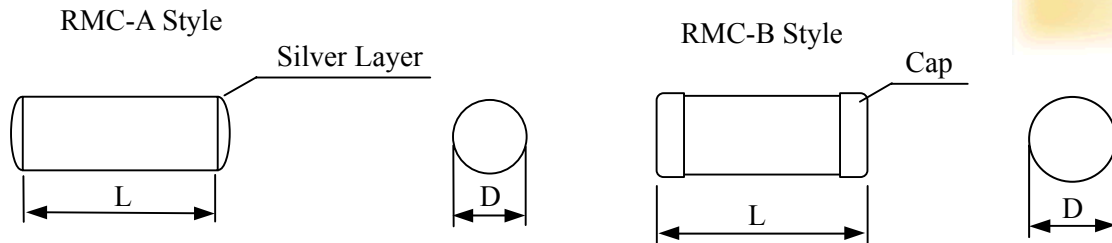
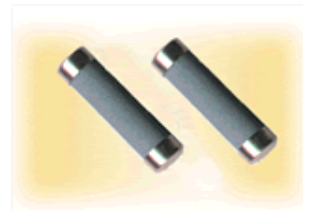


# High Voltage Resistor

## Ceramic Resistors - RMCA, RMCB

### Ceramic Resistor Features

Suitable for noise suppressor of engine ignition system.  
Reliable with non-disconnection failure. Custom types are available.



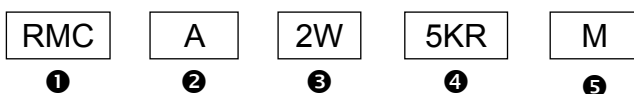
### Ceramic Resistor General Specifications

Model	Style	Rated Wattage	Dimensions (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	
RMC	B	2	11 ± 1.5	4.6 ± 0.5
	A		18 ± 1.5	4.0 ± 0.4
RMC	B	3	19 ± 1.5	4.6 ± 0.5
	A		24 ± 2.0	4.0 ± 0.4
RMC	B	5	25 ± 2.0	4.6 ± 0.5
	A		24 ± 2.0	7.0 ± 0.5
RMC	B	5	25 ± 2.0	7.6 ± 0.5
	A		24 ± 2.0	7.0 ± 0.5

### Ceramic Resistor Electrical Characteristics

Item		RMCA, RMCB			
		1	2	3	5
Power Rating at 25°C (W)		1	2	3	5
Operating Temp. Range (°C)		-40 ~ 155			
Resistance Tolerance		K(±10%), M(±20%)			
Resistance Range (Ω)		510 ~ 33K	1K ~ 56K	1K ~ 100K	470 ~ 33K
Max. Working Voltage (V)		300	350	400	500
T.C.R (PPM/°C)	25°C~40°C	-750 ~ 3300	-750 ~ 3300	-750 ~ 3300	-750 ~ 3300
	25°C~155°C	-750 ~ 2600	-750 ~ 2600	-750 ~ 2600	-750 ~ 2600
Max. Pulse Voltage (KV)		8	15	20	25
Moisture Resistance (%)		10	10	10	10

### How to Order



- ① Product Type
- ② Style
- ③ Rated Power
- ④ Resistance Value(Ω)
- ⑤ Resistance Tolerance

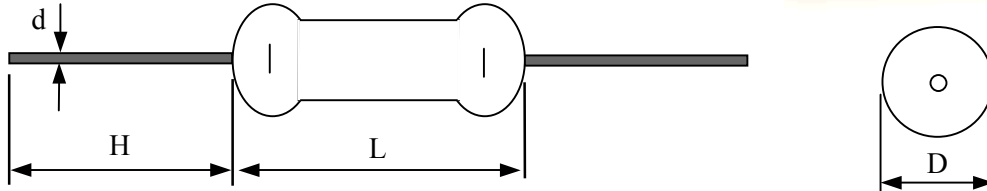
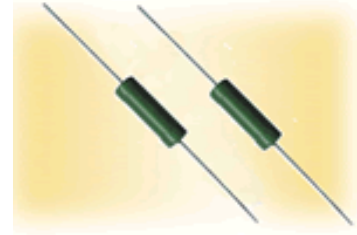


# High Voltage Resistors

## Surge Resistors Metal Ceramic - RMCC Series

### ► Metal Ceramic Resistor Features

Excellent characteristic against high voltage surge current. Higher reliability for disconnection failure by comparing to wirewound and film type. Suitable for high voltage circuits in X-ray generators and electron microscopes.



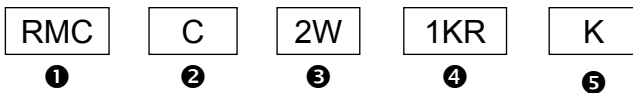
### ► Surge Resistor Metal Ceramic General Specifications

Model	Style	Rated Wattage	Dimensions (mm)			
			L	D	H	d
RMC	C	1	11±1.5	4.8±0.5	25±2	0.8±0.05
RMC	C	2	19±1.5	4.8±0.5	25±2	0.8±0.05
RMC	C	3	25±2.0	4.8±0.5	25±2	0.8±0.05
RMC	C	5	25±2.0	7.8±0.5	30±3	1.0±0.05

### ► Metal Ceramic Resistor Electrical Characteristics

Item	RMCA, RMCB				
Power Rating at 25°C (W)	1	2	3	5	
Operating Temp. Range (°C)	-40 ~ 155				
Resistance Tolerance	K(±10%), M(±20%)				
Resistance Range (Ω)	510 ~ 33K	1K ~ 56K	1K ~ 100K	470 ~ 33K	
Max. Working Voltage (V)	300	350	400	500	
T.C.R (PPM/°C)	25°C~ 40°C	-750 ~ 3300	-750 ~ 3300	-750 ~ 3300	-750 ~ 3300
	25°C~155°C	-750 ~ 2600	-750 ~ 2600	-750 ~ 2600	-750 ~ 2600
Max. Pulse Voltage (KV)	8	15	20	25	
Moisture Resistance (%)	10	10	10	10	

### ► How to Order



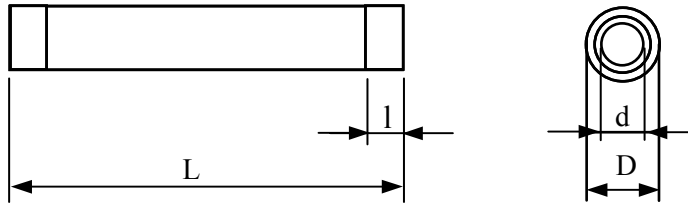
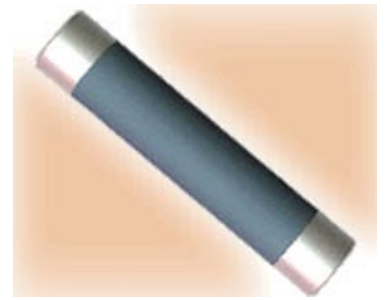
- ❶ Product Type
- ❷ Style
- ❸ Rated Power
- ❹ Resistance Value (Ω)
- ❺ Resistance Tolerance



# High Voltage Resistors

## High Frequency Resistors - RY31A

High Frequency Resistor Oxide Film - RY31A, 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 can be suitable for the application with large current as well as high frequency circuit.



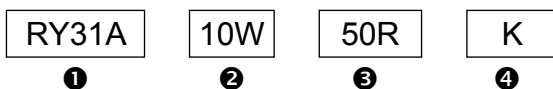
### ► High Frequency Resistor RY31A Electrical Characteristics

Rated power (W)	T.C.R (PPM/°C)	Resistance range (Ω)	Tolerance (%)	Pulse test voltage (KV)	Ambient Temp. (70°C Full Power)	D max. (mm)	L max. (mm)	d max. (mm)	l max. (mm)
10	+20°C ~ +125°C  ±400	50	±5(J) ±10(K)	3.2	-55°C~ +125°C	Φ 15.1	77	Φ 10.7	5±0.5
		75		4					
25		50		5		Φ 25.1	121	Φ 17.9	10±1
		70		6.5					
50		50		7.5		Φ 35.1	162	Φ 23.1	12±1
		75		8.7					
100		50		11		Φ 35.1	202	Φ 23.1	20±2
		75		12.5					
150		50		12.5		Φ 35.1	302	Φ 23.1	20-1
		75		12.5					

Note: Resistance range is 1~100.

The resistors with the standard resistance values as showed as above. will be supplied with a shorter delivery.

### ► High Frequency Resistor Product Identification



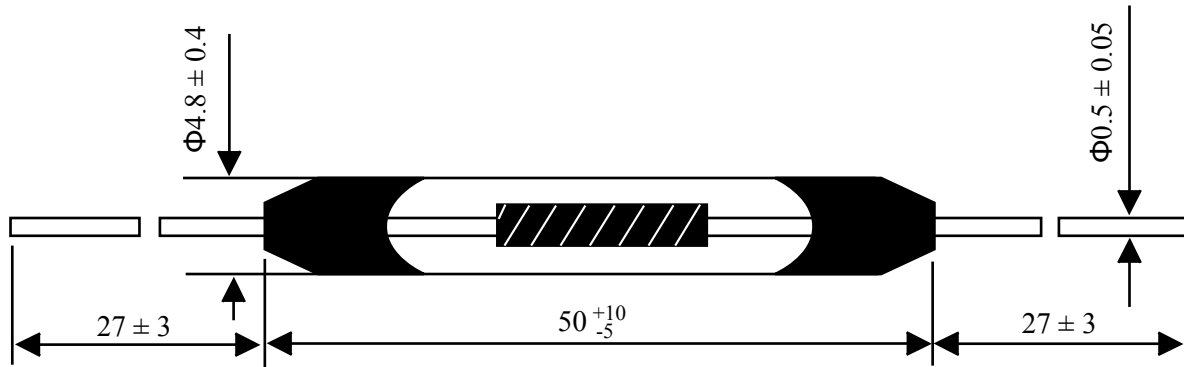
- ① Product Type
- ② Rated Power
- ③ Resistance Value (Ω)
- ④ Resistance Tolerance



# High Voltage Resistors

## RH1 Type - Glaze Glass High Voltage Resistors

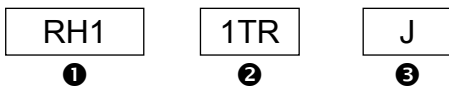
RH1 Type - high voltage glaze glass resistors features withstanding extreme impulse and short time over load, and applications in micro current circuit measurement and impulse equipments.



### ► High Voltage Resistor RH1 Specifications

Resistance Range	$1 \times 10^7 \sim 1 \times 10^{12}(\Omega)$
Resistance Tolerance	(J $\pm$ 5%) (K $\pm$ 10%)
Operating Temperature	-55°C ~ +125°C
Temperature Coefficient	$\pm 500\text{PPM}/^\circ\text{C}$ (-55 ~ +125°C)
Damp Heat	$\Delta R \leq \pm (5\%R + 0.1\Omega)$
Working Voltage	1000V

### ► Product Identification



- ❶ Product Type
- ❷ Resistance Value
- ❸ Resistance Tolerance

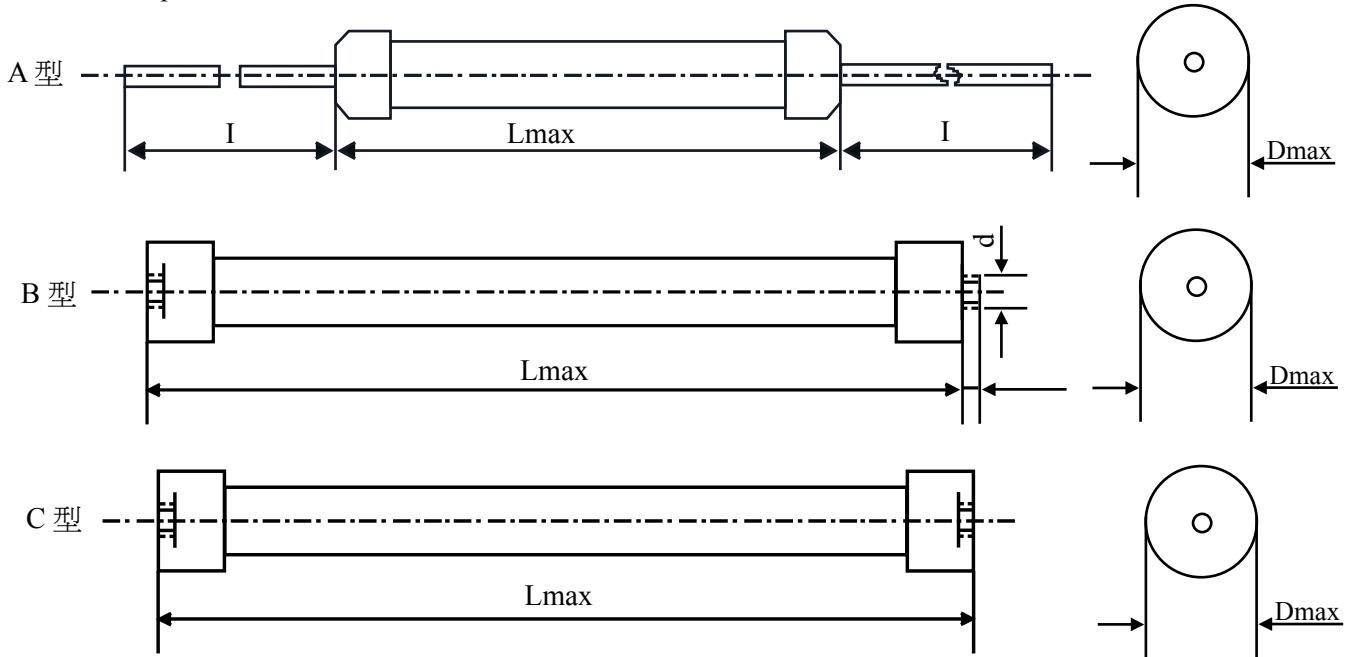


# High Voltage Resistors

## Metal Glaze Series - Impulse Resistors

Metal Glaze Series RI80 Impulse Resistors is able to absorb large amounts of energy at high voltage while remaining non-inductive. Ideal for: Capacitor crowbar circuits, Impulse voltage generators, Energy research, Pulse modulators, Radar Pulse-forming networks, High voltage snubber circuits, Arc furnace damping, X-ray/imaging equipment, and EMI/lightning suppression. This general line of tubular is available in a widevariety of sizes and terminations. They retain the non-inductive and heavy load characteristics. RI80 can handle up to 35 KV.

High Voltage Resistor



### ► Impulse Resistors - Metal Glaze Series General Specifications

Part Number	Rated Wattage	Style	Dimensions				Resistance Range (M $\Omega$ )	Temp Coefficient ( $10^{-6}/^{\circ}\text{C}$ )	Max Working Voltage (kv)	Operating Temp	Resistance tolerance
			L max	D max	I	D					
RI80-1	1	a	30 $\pm$ 2	9 $\pm$ 1	30 $\pm$ 3	0.7	10-1000	$\leq$ 200	10	-55 $^{\circ}$ C ~ +70 $^{\circ}$ C	G( $\pm$ 2%) J( $\pm$ 5%) K( $\pm$ 10%)
RI80-2	2	a	50 $\pm$ 2	9 $\pm$ 1	30 $\pm$ 3	0.7	10-1000	$\leq$ 200	15		
RI80-3	3	a	65 $\pm$ 2	9 $\pm$ 1	30 $\pm$ 3	0.7	10-1000	$\leq$ 200	15		
RI80-5	5	a	100 $\pm$ 2	9 $\pm$ 1	30 $\pm$ 3	1	10-1000	$\leq$ 300	25		
RI80-10	10	b	147 $\pm$ 2	11 $\pm$ 1	6	M4	10-1000	$\leq$ 300	30		
RI80-20	20	c	116 $\pm$ 2	17 $\pm$ 1			10-100	$\leq$ 400	30		
RI80-25	25	c	116 $\pm$ 2	19 $\pm$ 1			10-100	$\leq$ 400	30		
RI80-30	30	c	116 $\pm$ 2	19 $\pm$ 1			10-100	$\leq$ 400	30		
RI80-50	50	c	116 $\pm$ 2	21 $\pm$ 1			10-100	$\leq$ 400	30		
RI80-80	80	c	130 $\pm$ 2	27 $\pm$ 1			10-51	$\leq$ 400	30		
RI80-100	100	c	160 $\pm$ 2	27 $\pm$ 1			10-51	$\leq$ 400	35		
RI80-150	150	c	210 $\pm$ 2	27 $\pm$ 1			10-51	$\leq$ 400	35		
RI80-200	200	c	260 $\pm$ 2	27 $\pm$ 1			10-51	$\leq$ 400	35		
RI80-300	300	c	310 $\pm$ 2	33 $\pm$ 1			1-51	$\leq$ 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.



# High Voltage Resistors

## ► How to Order

RI80	1W	a	10MR	G
❶	❷	❸	❹	❺

❶ Product Type

❷ Rated Power

❸ Style

❹ Resistance Value( $\Omega$ )

❺ Resistance Tolerance



# High Voltage Resistors

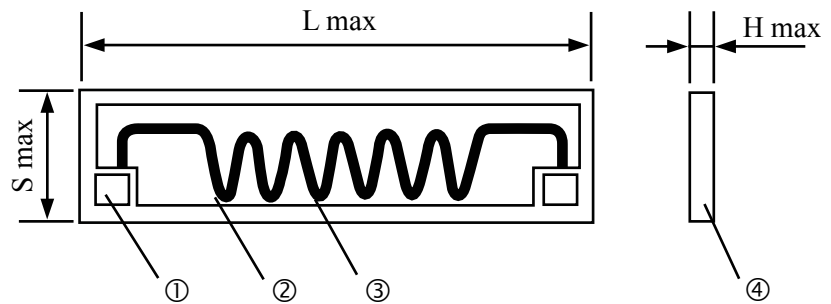
## Thick Film Resistors High Voltage Glaze Glass - RI82

Thick Film Resistor High Voltage Glaze Glass RI82 Chip Type are able to absorb large amounts of energy at high voltage while remaining non-inductive. Ideal for: Capacitor crowbar circuits, Impulse voltage generators, Energy research, Pulse modulators, Radar Pulse-forming networks, High voltage snubber circuits, Arc furnace damping, X-ray/imaging equipment, and EMI / lightning suppression. This general line of high voltage resistor is available in a wide variety of sizes and terminations. They retain the non-inductive and heavy load characteristics. RI82 can handle up to 30 KV.



### ► Chip Type Dimension ( a Style ) - High Voltage Glaze Glass Resistor

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



### ► Chip Type General Specifications - High Voltage Glaze Glass Resistor

Part Number	Rated Wattage (w)	Style	Dimensions				Resistance Range (MΩ)	Temp Coefficient (10 <sup>-6</sup> / °C)	Resistance Tolerance	Max Working Voltage (KV)
			Lmax	Smax	Hmax	I				
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.



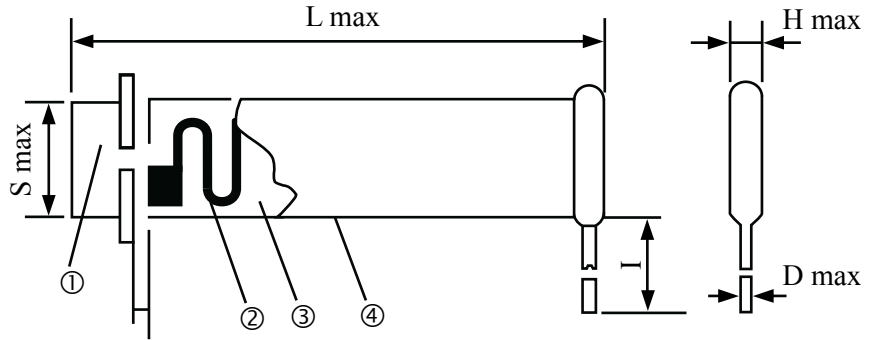




# High Voltage Resistors

## ► Dip Type Dimension ( b, c Style ) - High Voltage Glaze Glass Resistor

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

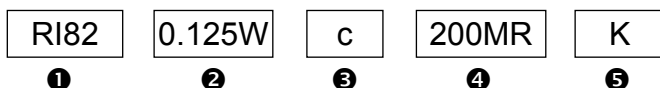


## ► Dip Type General Specification - High Voltage Glaze Glass Resistor

Part Number	Rated Wattage (w)	Dimensions					Resistance Range (MΩ)	Temp Coefficient (10 <sup>-6</sup> /°C)	Max Working Voltage (KV)	Resistance Tolerance
		L ± 2	S ± 2	H max	I	D max				
RI82-0.1	0.1	21	3.5	2.5	20.0min	0.40	10-1000	≤200	2	
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	
RI82-1	1	25	10	2.5	30.0max	0.56	100-10K	≤200	15	F(±1%)
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	J(±5%)
RI82-1	1	38	10	3	45.0max	0.80	10-1000	≤200	20	K(±10%)
RI82-2	2	38	10	3	40.0max	0.80	100-10K	≤200	20	M(±20%)
RI82-2	2	45	10	3	45.0max	0.80	100-10K	≤200	20	
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	
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.

## ► How to Order



- ① Product Type
- ② Rated Power
- ③ Style
- ④ Resistance Value(Ω)
- ⑤ Resistance Tolerance

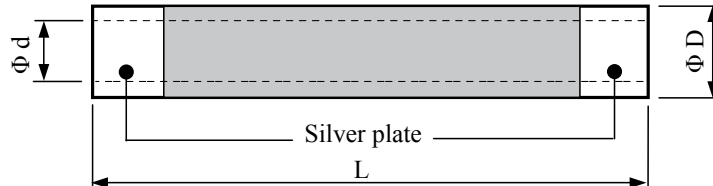


# High Voltage Resistors

## Non-Inductance Ceramic Tubular Resistors - RMCD Series

### ► Features:

Non-inductance high voltage ceramic tubular resistors offer higher average power dissipation while retaining the advantages of high surge energy, high voltage withstand, and non-inductance. These ceramic composite resistors are especially useful in RF applications such as transmitters and modulators, where the tube configuration provides more effective convection cooling.



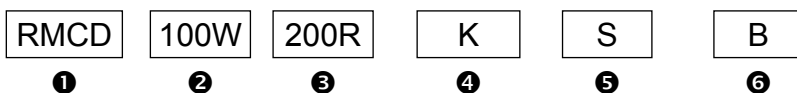
### ► General Specifications

Type	Dimensions (mm)			Resistance ( $\Omega$ )	Tolerance (%)	Energy (KJ)	Peak Voltage (KV)	Power (W)
	$L \pm 3.0$	$\Phi D \pm 2.0$	$\Phi d \pm 2.0$					
RMCD-100	305	25.4	15.5	75 ~ 1K	$\pm 10$	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

### ► Electrical Characteristics

Type	Power Rating	Temperature Coefficient	Resistivity	Specific Heat	Inductance	Density	Max. Operating Temperature
RMCD	35 ~ 100W	-500 ~ -1500PPM/ $^{\circ}C$	5 ~ 80 $\Omega$ -cm	2J/cm $^3$ · $^{\circ}C$	0.4 $\mu$ H max	2.25g/cm $^3$	220 $^{\circ}C$ max

### ► How to Order



- ❶ Product Type
- ❷ Power Rating (W)
- ❸ Resistance Value ( $\Omega$ )
- ❹ Resistance Tolerance: K(  $\pm 10\%$ )
- ❺ Silver plate terminal
- ❻ Color: B (black)