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DIRECT

Electronics Tech.

(RJ)

General Purpose Precision Resistor

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▶ Product Introduction

Direct's precision resistor is designed as a low-cost alternative to traditional solutions for precision applications.

Features :

- High thermal conductivity and specific gravity rods.
- Power Rating : 0.16W~3W, precision tolerance tight to A5(± 0.05).
- Superior electrical TCR performances narrowed to C7(± 5) ppm/ $^{\circ}\text{C}$.
- Epoxy coating, precision metal film, Lead (Pb)-free and RoHS compliant.

Applications :

- Telecom,
- Measuring and Calibration Equipment,
- Industrial Process Control Systems,
- Audio,
- Video.

The (RJ) series are manufactured using vacuum sputtering system to deposit multiple layers of mixed metals and passivative materials onto a carefully treated high grade ceramic substrate, the resistors are coated with layers of blue lacquer.

The metal-film technology is capable of supporting accuracy characteristics over a broad resistance range. Types include axial through-hole and metal film fusible resistor for special purpose.

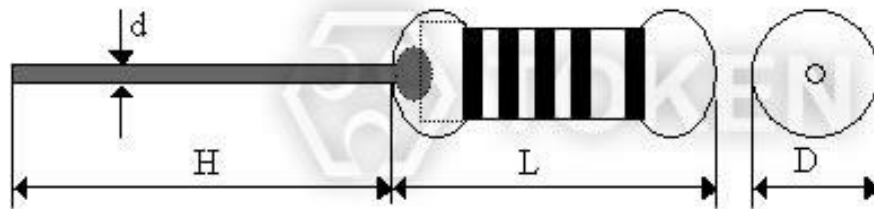
(RJ) Series equate Vishay, IRC, EBG, and Panasonic Precision Devices with more competitive price and fast delivery. Contact us with your specific needs. Besides, you can link to Direct official website "[Precision Resistors](http://www.direct-token.com)" to get more information.



► **Characteristics - Standard Size**

Characteristics - Standard Size (RJ)

Type	RJ72	RJ73	RJ74	RJ16	RJ17	RJ18	
MIL-R-10509F type	RN50	RN55	RN60	RN65	RN70	RN75	
Resistance range (Ω)	0.1 ~ 22M						
Resistance tolerance (%)	A5 (± 0.05), B (± 0.10), C (± 0.25), D (± 0.5), F (± 1), J (± 5.0)						
Temperature coefficient (ppm/ $^{\circ}$ C)	C7 (± 5), C6 (± 10), C5 (± 15), C3 (± 25), C2 (± 50), C1 (± 100)						
Climatic category (LCT/UCT/days)	55 / 125 / 56						
Rated dissipation (W) P_{70}	0.16	0.25	0.5	1.0	2.0	3.0	
Operating voltage (V) U_{max}	200	250	300	350	450	500	
Short time over load voltage (V) U_{max}	400	500	600	700	900	1000	
Operating Temperature range	-55 $^{\circ}$ C to 125 $^{\circ}$ C						
Insulation voltage	>500V						
Insulation resistance	>1G Ω						
Dimensions (Unit: mm)	L (Max.)	3.8	6	10	12	16	26
	D (Max.)	2.0	2.5	3.5	4.5	5.5	8.6
	$d \pm 0.1$	0.4	0.5	0.6	0.7	0.8	0.8
	$H \pm 2$	24	24	26	26	26	26



Standard Size (RJ) Dimensions



► **Characteristics - Compact Size**

Characteristics - Compact Size (RJ)

Type	RJ73S	RJ74S	RJ16M	RJ16S	RJ17M	RJ17S	RJ18M	RJ18S	
MIL-R-10509F type	RN50	RN55	RN60	RN60	RN65	RN65	RN70	RN70	
Resistance range (Ω)	0.1 ~ 22M								
Resistance tolerance (%)	A5 (± 0.05), B (± 0.10), C (± 0.25), D (± 0.50), F (± 1.0), J (± 5.0)								
Temperature coefficient (ppm/ $^{\circ}$ C)	C7 (± 5), C6 (± 10), C5 (± 15), C3 (± 25), C2 (± 50), C1 (± 100)								
Climatic category (LCT/UCT/days)	55 / 125 / 56								
Rated dissipation (W) P_{70}	0.25	0.5	1.0	1.0	2.0	2.0	3.0	3.0	
Operating voltage (V) U_{max}	250	300	350	350	400	400	450	450	
Short time over load voltage (V) U_{max}	500	600	700	700	800	800	900	900	
Operating Temperature range	-55 $^{\circ}$ C to 125 $^{\circ}$ C								
Insulation voltage	>500V								
Insulation resistance	>1G Ω								
Dimensions (mm)	L (Max.)	3.8	6.0	6.3	10	10	12	12	16
	D (Max.)	2.0	2.54	2.54	3.5	3.5	4.5	4.5	5.5
	d \pm 0.1	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.8
	H \pm 2	24	24	24	26	26	26	26	26

The diagram illustrates the physical dimensions of a compact size resistor. It shows a side view and a top view. The side view labels the length of the resistor body as 'L', the diameter of the body as 'D', the diameter of the lead wire as 'd', and the total length of the lead wire as 'H'. The top view shows the circular cross-section of the resistor body with diameter 'D'.

Compact Size (RJ) Dimensions

● Notice: Resistance out of range, tolerance and temperature coefficient match are under request.

▶ **Order Codes**

Order Codes (RJ)

RJ16	22R		B		C6		P	
Part Number	Resistance Value (Ω)		Resistance Tolerance (%)		Temperature Coefficient (PPM/°C)		Package	
RJ72	22R	22	A5	±0.05	C1	±100	P	Bulk
RJ73	220R	220	B	±0.10	C2	±50	TB	Taping Box
RJ74	2K2	2.2K	C	±0.25	C3	±25		
RJ73S	22K	22K	D	±0.5	C5	±15		
RJ74S	2M2	2.2M	F	±1.0	C6	±10		
RJ16M	22M	22M	J	±5.0	C7	±5		

► General Information

High Precision Devices Made in Direct

Direct is equipped to design and produce custom components to meet many design and reliability demands.

Direct's line of high-reliability and precision products reflects a long-term commitment to our industrial and military customers. In addition to standard industry-grade resistor products, we also have many resistive products designed to meet various military source-controlled drawings.

We continually strive to meet the changing application requirements of the markets by developing new products and manufacturing technologies on an on-going basis.

Enhanced Precision and Stability for Low-Cost Uses

Every component Direct provides to the commercial, industrial, and military markets for cost-efficiency uses is backed by the comprehensive testing and failure analysis capabilities of our own technical staff, whom are industrial experts in understanding and meeting the requirements of the environment.

Low TCR - Fast Approach to a Steady State

Direct Electronics provides a precision Temperature Coefficient of Resistance TCR as low as 2 ppm/°C, If you must guarantee a smaller resistance change in your application. TCR is the best known parameter used to specify a resistor's stability, and is used to depict the resistive element's sensitivity to temperature change due to ambient temperature variations.

A resistor's TCR tells how much its value changes as its temperature changes. It is usually expressed in ppm/°C (parts per million per degree Centigrade) units.

Long-Term Proven Service

Our technical expertise, our knowledge of the industry, our broad product offering, and our ability to work long-term are all part of Direct's ongoing commitment to meeting the changing requirements of our most reliability-conscious customer, today and in the future.

