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Datasheet

RS Pro RS Series Axial Carbon Resistor 100kΩ ±5% 2W -700 → 0ppm/°C

RS Stock No: **707-8940**

Product Details

RS Pro axial carbon resistor with ±5% tolerance, provides 100 kΩ resistance and is power rated at 2 W. The temperature coefficient of resistance is in the range -700 to 0 ppm/°C. Carbon film axial leaded resistor offers excellent long-term stability. It features standard solder-plated copper leads. Applications include automotive, telecommunication and medical equipment. A comprehensive range of high stability carbon film resistors are qualified and tested to the requirements of IEC 115 and IEC 115-2. The ruggedized welded cap and lead method of manufacture provides a considerable strength and resistance to damage. The coating materials and the colour bands are epoxy resin and are highly resistant to solvents, abrasion and chipping. Improvements in materials and processing have allowed the rated power to be improved. Excellent stability against changes in load conditions or moisture levels, with a low noise level and high reliability make these carbon film resistors suitable for a wide range of applications. Rated at 70°C in free air mounted horizontally.

Features and Benefits

- Available in resistances from 1 Ω to 9.1 mΩ
- Resistor body: 2.3 mm diameter, 6.3 mm length
- Long-term stability
- Solder plated copper leads

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Specifications:

Case Style	Ceramic
Diameter	4.5 mm
Dimensions	4.5 (dia.) x 11.5 mm
Lead Diameter	0.78 mm
Length	11.5 mm
Maximum Operating Temperature	+155°C
Maximum Temperature Coefficient	0 ppm/°C
Minimum Operating Temperature	-55°C
Minimum Temperature Coefficient	-700 ppm/°C
Power Rating	2 W
Resistance	100 kΩ
Technology	Carbon Film
Temperature Coefficient	-700 to 0 ppm/°C
Termination Style	Axial
Tolerance	±5%
Maximum Overload Voltage	1000 V
Lead Length	35 mm
Maximum Operating Voltage	500 V

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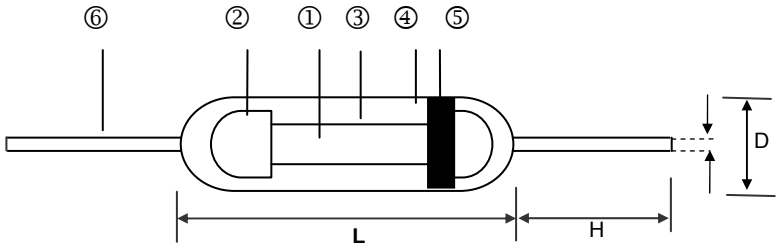
Carbon Film Leaded Resistor - RS Series



①	Ceramic Rod	④	Non-flame Paint With Sol Vent-proof
②	Tinned Iron Caps	⑤	Colour Code
③	Carbon Film	⑥	Lead Wire

■Dimensions

Unit: mm

Type	L	D	H	d	Weight (g) (1000pcs)
Carbon 0.125W	3.3+0.4/-0.2	1.8±0.3	29.3±2.0	0.452.3±0.03	92
Carbon 0.25W	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03	155
Carbon 0.5W (H)	6.3±0.5	2.3±0.3	28±2.0	0.55±0.03	155
Carbon 1W (H)	9.0±0.5	3.2±0.5	26±2.0	0.65±0.03	352
Carbon 2W (H)	11.5±1.0	4.5±0.5	35±2.0	0.78±0.03	775

■Part Numbering

RS-	Carbon-	1R-	5%-	0.125W
Series				Power rating @ 70℃
	Carbon Carbon(H)	0.5R: 0.5 Ω	±5%	0.125W

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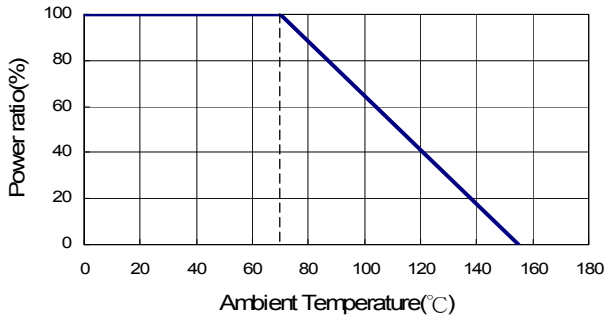
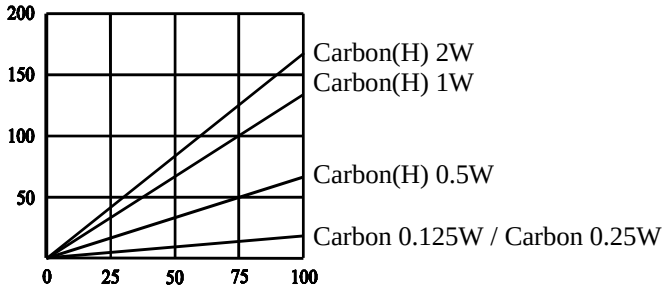
■Derating Curve



■Hop-Spot Temperature



■Environmental Characteristics

Item	Requirement	Test Method
Short Time Overload	±(0.75%+0.05Ω)	**JIS-C-5201-1 5.5** RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	＞1000MΩ	**JIS-C-5201-1 5.6** Apply 100V_{DC} for 1 minute
Endurance	±(3%+0.05Ω)	**JIS-C-5201-1 7.10** 70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	□100KΩ±3% □100KΩ±5%	**JIS-C-5201-1 7.9** 40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	90% min. Coverage	**JIS-C-5201-1 6.5** 245±5°C for 3 seconds
Dielectric Withstanding Voltage	By Type	**JIS-C-5201-1 5.7** Apply Max. Overload Voltage for 1 minute
Temperature Coefficient	< 100KΩ +350ppm~-500ppm 100KΩ~1MΩ -0ppm~-700ppm > 1 MΩ -0ppm~-1500ppm	Resistance value at room temperature and room Temperature+100℃
Pulse Overload	±(1%+0.05Ω)	**JIS-C-5201-1 5.8** 4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Resistance To Solvent	No deterioration of coatings and markings	**JIS-C-5201-1 6.9** Trichroethane for 1 min. with ultrasonic
Terminal Strength	Tensile: □2.5 kg	Direct Load for 10 seconds In the direction off the terminal leads

■ **Rated Continuous Working Voltage(RCWV) = $\sqrt{P*R}$**
■ **Storage Temperature: 25±3°C; Humidity < 80%RH**

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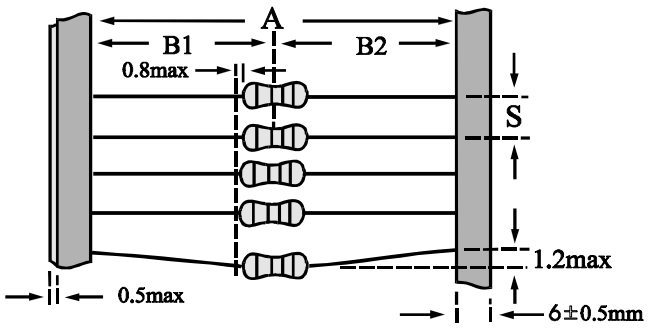
■Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range
						±5%
Carbon	0.125W	-55 ~ +155°C	150V	300V	300V	0.1Ω - 22MΩ
Carbon	0.25W		250V	500V	500V	1Ω - 10MΩ
Carbon(H)	0.5W		300V	500V	500V	0.1Ω - 22MΩ
Carbon(H)	1W		400V	800V	800V	1Ω - 10MΩ
Carbon(H)	2W		500V	1000V	1000V	0.1Ω - 10MΩ

■Taping/Packing Specifications

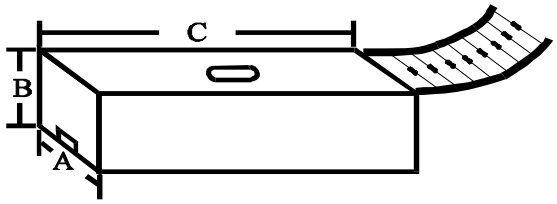
Packing Methods (Ammo)



Unit: mm

Packaging / Type	Packing Methods		
	A	*B1-B2*	*S*
Carbon 0.125W	52+1/-0	1.2	5
Carbon 0.25W	52+1/-0	1.2	5
Carbon 0.5W (H)	52+1/-0	1.2	5
Carbon 1W (H)	52+1/-0	1.5	5
Carbon 2W (H)	52+1/-0	1.5	10

Ammo Packing



Unit: mm

Packaging / Type	Packing Methods			Ammo Packing			
	A	*B1-B2*	*S*	A	B	C	Qty
Carbon 0.125W	26+1/-0	1.0	5	80	105	264	5,000
Carbon 0.25W	26+1/-0	1.0	5	80	105	264	5,000
Carbon 0.5W (H)	26+1/-0	1.0	5	80	105	264	5,000
Carbon 1W (H)	73+1/-0	1.5	5	103	82	265	1,000
Carbon 2W (H)	73+1/-0	1.5	10	103	96	265	1,000

■Marking & Resistance Tolerance

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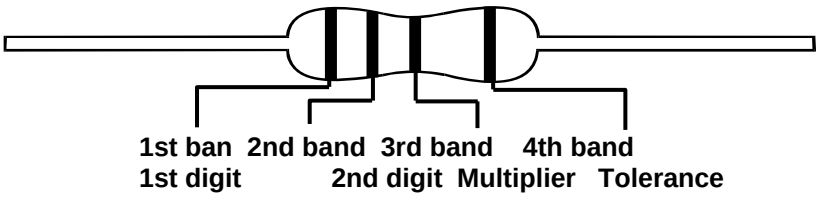

±5%	E-24	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1

Cold	Digit	Multiplier	Tolerance	
	-	-	-	-
	-	10^{-2}	-	-
	-	10^{-1}	±5.0%	J
	0	10^{0}	-	-
	1	10^{1}	-	-
	2	10^{2}	-	-
	3	10^{3}	-	-
	4	10^{4}	-	-
	5	10^{5}	-	-
	6	10^{6}	-	-
	7	10^{7}	-	-
	8	10^{8}	-	-
	9	10^{9}	-	-