

Features

- Non-inductive design
- Molded body for package uniformity
- Ideal for pulse-load handling characteristics
- Cut and formed product is available on select sizes; contact factory for details
- 1W now available
- RoHS compliant/ lead-free



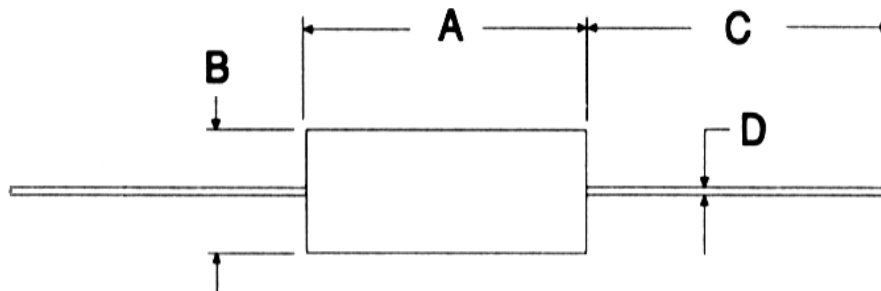
Electrical Specifications

Type / Code	Power Rating (Watts) @ 70°C	Maximum Continuous Working Voltage*	Maximum Pulse Voltage	Dielectric Withstanding Voltage	Ohmic Range and Tolerance	
					10%	5%
RC 1/4	0.25W	250V	400V	500V	1.0Ω – 5.6MΩ	2.2Ω – 5.6MΩ
RC 1/2	0.50W	350V	700V	700V	1.0Ω – 22MΩ	1.0Ω – 22MΩ
RC 1	1.00W	500V	1,000V	1,000V	2.2Ω – 1.0MΩ	–

* Lesser of \sqrt{PR} or maximum working voltage.

Mechanical Specifications

Type / Code	A Body Length	B Body Diameter	C Lead Length (Bulk)	D Lead Diameter	Units
RC 1/4	0.248 ± 0.028	0.094 ± 0.004	1.18 ± 0.12	0.0236 ± 0.0020	inches
	6.30 ± 0.70	2.40 ± 0.10	30.0 ± 3.0	0.60 ± 0.05	mm
RC 1/2	0.374 + 0.031/-0.028	0.142 ± 0.008	1.10 ± 0.12	0.0275 + 0.0028/-0.0020	inches
	9.50 + 0.8/-0.70	3.60 ± 0.20	28.0 ± 3.0	0.70 + 0.07/-0.05	mm
RC 1	0.560 ± 0.030	0.220 ± 0.010	1.02 ± 0.12	0.040 ± 0.002	inches
	14.30 ± 0.70	5.70 ± 0.30	26.0 ± 3.0	0.90 ± 0.05	mm



How to Order

RC		1/2	5.6M	5%	R				
SEI Type		Code	Nominal Resistance	Tolerance	Packaging				
SEI Type	Description	Code	Wattage	Tolerance	Values	SEI Types	Pkg Qty	Description	Code
RC	Carbon Comp	1/4	0.25W	5%	E24	1/4, 1/2	5,000	Tape	R
		1/2	0.50W	10%	E12	All	1,000	Bulk	A
		1	1.00W			All	2000	Ammo	T

Resistance Temperature Characteristics

	Resistance Range	-55°C	+105°C
Maximum % resistance change from room temperature (+25°C) value	under 1K 1K to 9.1K 10K to 91K 100K to 910K 1 Mg to 10 Mg	+2.0 to +5.0 +5.0 to +9.0 +8.0 to +11.0 +10.0 to +14.0 +13.0 to +20.0	-4.0 to -2.0 -5.0 to -3.0 -7.0 to -5.0 -9.0 to -7.0 -14.0 to -9.0

Performance Characteristics (JISC 5201 - 1:1998)

Test	Test Results	Test Method
Voltage Proof	No breakdown or flashover	V-block method RC 1/4 100 VAC, 60 seconds RC 1/2 500 VAC, 60 seconds
Overload	±2% +0.05Ω No visible damage, legible markings	2.5 times the rated voltage or twice the limiting element voltage, whichever is less. Severe, 5 seconds
Termination Strength	Tensile: ±2% +0.05Ω, No visible damage Bending: ±2% +0.05Ω, No visible damage Torsion: ±2% +0.05Ω, No visible damage	10N for 5 – 10 seconds 5N, twice 180°C, two rotations
Solderability	In accordance with Clause 4.17.4.5	235°C, 5 seconds
Resistance to Soldering Heat	±3% +0.05Ω No visible damage, legible markings	After immersion into flux, the immersion into solder shall be carried out 4mm from the body at 350°C for 3.5 seconds
Temperature Shock	±2% +0.05Ω No visible damage	5 cycles between -55°C to 125°C
Climatic Sequence	±10% +0.5Ω Insulation resistance: R ≥100M ohm. No visible damage	Dry/Damp heat: 12 +12 hour cycle, first cycle Cold/Damp heat: 12 +12 hour cycle, remaining cycle D.C. load
Damp Test, Steady State	±10% +0.5Ω Insulation resistance: R ≥100M ohm. No visible damage, legible marking	40°C 95% relative humidity for 56 days, test a, b, and c of Clause 4.24.2.1
Endurance @ 70°C	±10% +0.5Ω Insulation resistance: R ≥1G ohm. No visible damage	Rated voltage, 1.5 hours On, 0.5 hours Off at 70°C, 1,000 hours
Endurance @ 125°C	±10% +0.5Ω Insulation resistance: R ≥1G ohm. No visible damage	125°C, no load, 1,000 hours

Operating Temperature Range : -55°C to +125°C

Reliability Test - Load Life in Moisture

Criterion (%)	Load Ratio P/Pn (%)	Total Testing Time (Hrs)	Number of Fractures (pcs)	Failure Ratio		Average Lifetime (60% reliability level) (Hrs)	
				λ	λ CL (60%)		
Δ R/R	±5	0	2.984 x 10 ⁶	6	0.201	0.244	4.098 x 10 ⁵
		20	2.990 x 10 ⁶	4	0.134	0.176	5.682 x 10 ⁵
		60	2.997 x 10 ⁶	2	0.067	0.104	9.615 x 10 ⁵
		100	2.992 x 10 ⁶	3	0.100	0.139	7.194 x 10 ⁵
		Total	1.196 x 10 ⁷	15	0.125	0.138	7.209 x 10 ⁵
	±10	Total	1.20 x 10 ⁷	0	0.0055	0.0077	1.299 x 10 ⁷

Technical Guide

1) Storage Conditions:

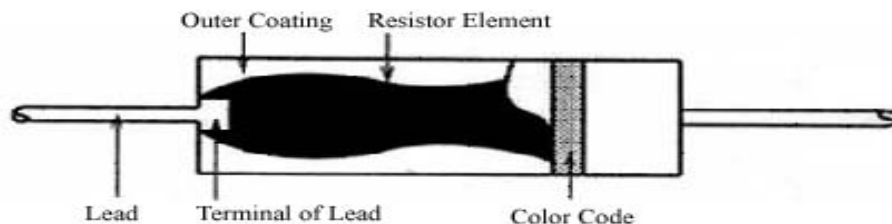
Temperature 5 to 35C (40 to 95F)
Humidity 25 - 60% Relative humidity
Term 2 years in factory poly-bag package (with desiccant)
Environment Clean, dry environment, free of corrosive gases

2) Application precautions:

Lead forming: forming is recommended at least 2mm of farther from the base of the lead
Soldering: Soldering is recommended at least 4mm or farther from the base of the lead

3) Washing:

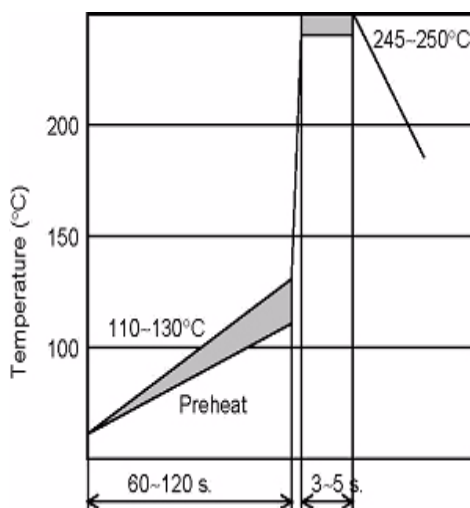
Carbon composition resistors are highly hygroscopic and changes in resistance value can occur if too much moisture is absorbed. For this reason it is recommended not to use water or water-soluble solvents to clean these components. Alcohol or hydrocarbon solvents are recommended for rinsing.



4) Soldering Recommendations:

Note: The conditions shown below are for reference. Please perform a mounting evaluation to assure compatibility.

i) Flow soldering (Recommended profile for Sn and Sn/Pb solders)



ii) Soldering Iron (Recommended for Sn and Sn/Pb solders)

Temperature of soldering tip: 300C, Duration: 10 sec. max.
Temperature of soldering tip: 350C, Duration: 3 sec. max.

Other:

- 1) Please evaluate and confirm the compatibility of your assembly process with this product
- 2) Please Refer to the catalog, the product news, and the specifications for details on the RC series resistors.
- 3) If you have any questions, please contact our sales staff.