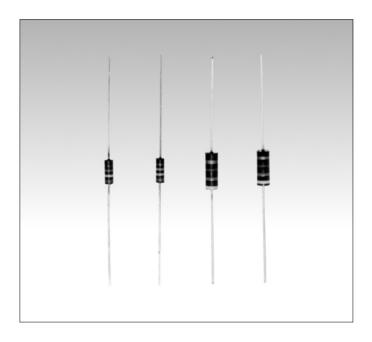
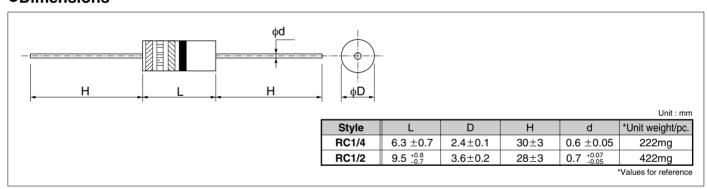
RC

●Features

- 1. Improved pulse endurance characteristics compared to carbon-film
- 2. Wide resistance range is available, 1 ohm ~ 22M ohm.
- 3. Stability Class: 10%

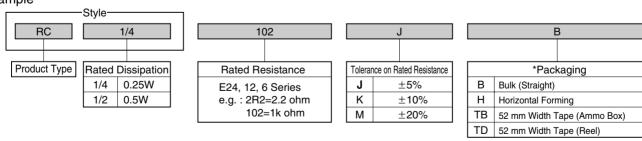


Dimensions



●Part Number Description





*Refer to Tape and Packaging information on pages 66.

FIXED CARBON COMPOSITION RESISTORS

Ratings

	Rated Dissipation at 70°C W	Limiting Element Voltage V	Rated Resistance	Combination of Rated Resistance Range and Temperature Coefficient of Resistance			Toloronce on Dated Decistores and	Isolation	Category Temperature
Style				Temperature Coefficient of Resistance %		Rated Resistance	Tolerance on Rated Resistance and Perferred Number Series for Resistors	Voltage	Range
				at -55 °C	at +125 °C	Range	T CHOICE NUMBER OF THE STORY	V	°C
RC1/4	0.25	250	1 ohm~5.6M ohm	+6.5 ~0	+1~-5 0~-6	1 ohm ~ 1k ohm 1.1k ohm ~ 10k ohm	J (± 5%) : E24	100	
				+13 ~0	0~-7.5	11k ohm ~100k ohm	K (± 10%) : E12 M(± 20%) : E6		-55~+125
RC1/2	0.5	350	1 ohm~22M ohm	+15 ~0	0~-10	110k ohm ~ 1M ohm		500	
				+20 ~0	0~-15	1.1M ohm ~ 22M ohm			

Note1. Rated Voltage = $\sqrt{\text{(Rated Dissipation)} \times \text{(Rated Resistance)}}$. (d.c. or a.c. r.m.s. Voltage)

Note2. Limiting Element Voltage can only be applied to resistors when the resistance value is equal to or higher than the critical resistance value.

Storage

Temperature 20±15°C, Humidity 60%R.H. Max, Recommendation Storing Term 6 months after shipped from factory.

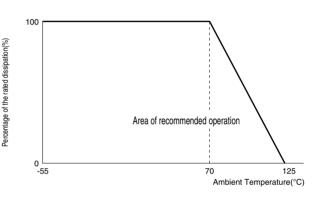
Derating Curve

The derated values of dissipation for temperatures in excess of 70°C shall be indicated by the following Curve.

Climatic Category

55/125/56

Lower Category Temperature -55°C **Upper Category Temperature** +125°C Duration of the Damp heat, Steady-State Test 56 days



●Performance Characteristics JIS C 5201-1: 1998

Description		Requirements	Test Methods			
Voltage proof		No breakdown or flashover	Clause 4.7 V-block method RC1/4 100Va.c.,60s RC1/2 500Va.c.,60s			
Variation of with tempera		See Ratings Table	Clause 4.8 Measuring temperature : +20°C/-55°C/ +20°C/+125°C/+20°C			
Overload		ΔR≤±(2%+0.1 ohm) No visible damage, legible marking	Clause 4.13 The applied voltage shall be 2.5 times of the rated voltage or twice of the limiting element voltage, whichever is the less Severe, 5s.			
	Tensile	ΔR≤±(2%+0.1 ohm) No visible damage	Clause 4.16.2 10N for 5~10s			
Robustness of terminations	Bending	ΔR≤±(2%+0.1 ohm) No visible damage	Clause 4.16.3 5N twice			
	Torsion	ΔR≤±(2%+0.1 ohm) No visible damage	Clause 4.16.4 180°C, 2 rotation			
Solderability		In accordance with Clause 4.17.4.5	Clause 4.17 235°C, 5s			
Resistance to soldering heat		ΔR≤±(3%+0.1 ohm) No visible damage, legible marking	Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out 4mm from the body at 350°C for 3.5s.			
Rapid change of temperature		ΔR≤±(2%+0.1 ohm) No visible damage	Clause 4.19 5 cycles between -55°C and +125°C.			
Climatic sequence		ΔR≤±(10%+0.5 ohm) Insulation resistance : R≥100M ohm No visible damage	Clause 4.23 Dry/Damp heat(12+12h cycle), first cycle./ Cold/Damp heat(12+12h cycle), remaining cycle./ D.C.Load.			
Damp test, steady state		ΔR≤±(10%+0.5 ohm) Insulation resistance : R≥100M ohm No visible damage, legible marking	Clause 4.24 40°C, 95%R.H., 56 days, test a) , b) and c) of Clause 4.24.2.1			
Endurance at 70°C		ΔR≤±(10%+0.5 ohm) No visible damage Insulation resistance : R≥1G ohm	Clause 4.25.1 Rated voltage, 1.5h "ON", 0.5h "OFF", 70°C, 1,000h.			
Endurance at the upper category temperature		ΔR≤±(10%+0.5 ohm) No visible damage Insulation resistance : R≥1G ohm	Clause 4.25.3 125°C, no-load, 1,000h.			

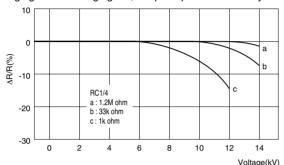
Note3. Critical Resistance Value is the resistance value at which the rated voltage is equal to the limiting element voltage.

FIXED CARBON COMPOSITION RESISTORS

Typical Characteristics

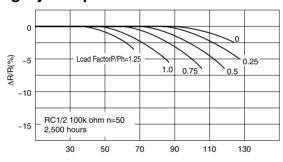
Surge Resistance Characteristics

Charging and discharging a 2,000 pF capacitor for 100 cycles.



Voltage(kV)

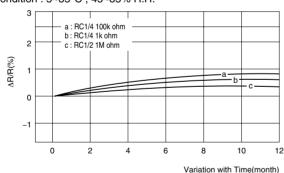
Relationship between Load Ratio and Category Temperature



Ambient Temperrature(°C)

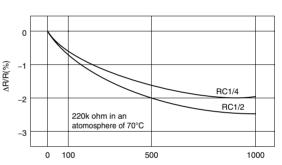
Variation with Time

Condition: 5~35°C, 45~85% R.H.



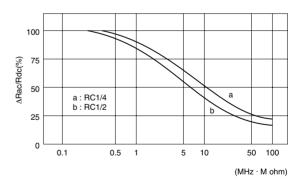
10 1R/R(%) RC1/2 -20 b : 10k ohm c: 1k ohm -30 14 Voltage(kV)

Endurance at 70°C



Testing Time(Hrs.)

Frequency Characteristics



"Typical characteristics indicate the mean values of $\Delta R/R$ etc."

Reliability Test

Endurance in humidity

Samples: RC1/4J,100 ohm,1k ohm,10k ohm,100k ohm×150 each. Total 2,400.

Conditions: Direct current voltage equivalent to the following load ratings in cycles on "ON" for 1.5h and "OFF" for 0.5h for a total of 5,000h in an atmosphere of 40°C, 90 to 95%R.H.

Criterion (%)		Load Ratio P/Pn Total Testing Time		Number of Failures	Failure	Average Lifetime (60% reliability level)	
		(%)	T(Hrs.)	r(pcs.)	λ	λCL(60%)	(Hrs.)
ΔR/R	±5	0	2.984X10 ⁶	6	0.201	0.244	4.098×10⁵
		20	2.990X10 ⁶	4	0.134	0.176	5.682×10⁵
		60	2.997X10 ⁶	2	0.067	0.104	9.615×10⁵
		100	2.992X10 ⁶	3	0.100	0.139	7.194×10⁵
		Total	1.196X10 ⁷	15	0.125	0.138	7.209×10⁵
	±10	Total	1.20X10 ⁷	0	0.0055	0.007	1.299×10 ⁷

Mouser Electronics

Authorized Distributor

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Kamaya:

RC1/2104JB RC1/2204	B RC1/23R9J	B RC1/2156JE	B RC1/2150JE	B RC1/2222JE	RC1/2115JE	B RC1/2683JB
RC1/2304JB RC1/2515JB	RC1/2471JB	RC1/2134JB	RC1/2391JB	RC1/2563JB	RC1/2470JB	RC1/2624JB
RC1/2166JB RC1/2305JE	RC1/2565JB	RC1/2113JB	RC1/2186JB	RC1/2821JB	RC1/28R2JB	RC1/2124JB
RC1/2681JB RC1/2434JE	RC1/2103JB	RC1/27R5JB	RC1/2301JB	RC1/2751JB	RC1/21R0KB	RC1/2825JB
RC1/25R6JB RC1/2126JE	RC1/24R7JB	RC1/2112JB	RC1/2754JB	RC1/2395JB	RC1/2474JB	RC1/2334JB
RC1/2180JB RC1/2123JB	RC1/2331JB	RC1/2914JB	RC1/2912JB	RC1/2913JB	RC1/2275JB	RC1/2684JB
RC1/2392JB RC1/2163JE	RC1/2122JB	RC1/2242JB	RC1/2755JB	RC1/2362JB	RC1/2110JB	RC1/2201JB
RC1/2685JB RC1/2155JE	RC1/2390JB	RC1/2136JB	RC1/2224JB	RC1/2181JB	RC1/22R7JB	RC1/2182JB
RC1/22R2JB RC1/2473JE	RC1/2915JB	RC1/2510JB	RC1/2394JB	RC1/2820JB	RC1/2300JB	RC1/23R0JB
RC1/2824JB RC1/2475JE	RC1/22R4JB	RC1/2622JB	RC1/2116JB	RC1/2335JB	RC1/2244JB	RC1/2302JB
RC1/2132JB RC1/2205JE	RC1/2562JB	RC1/2135JB	RC1/2822JB	RC1/2130JB	RC1/2271JB	RC1/2433JB
RC1/2273JB RC1/25R1JE	RC1/2185JB	RC1/2752JB	RC1/2620JB	RC1/2511JB	RC1/2680JB	RC1/2243JB
RC1/2114JB RC1/24R3JE	RC1/2910JB	RC1/2363JB				