

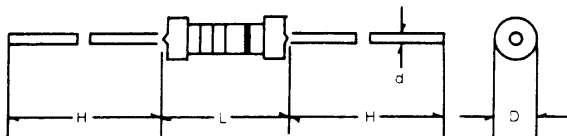
multicomp

Carbon Film Fixed Resistors

Features:

- High quality performance
- Great economy
- Flame retardant type available
- Automatically insertable
- Weldable type with cooper plated lead wire available
- Too low or too high ohmic value can be supplied only case by case

Dimension



Normal Size

Style	Dimension (mm)				
	Rating	L Max.	D Max.	d $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	H ± 3
CR-12PS	0.125W	4.2	2.0	0.5	28
CR-25PS	0.25W	6.8	2.5	0.6	28
CR-50PS	0.5W	10	3.5	0.6	28
CR-100PS	1W	16	5.5	0.8	28
CR-200PS	2W	17.5	6.5	0.8	28

* 0.125W L = 3.5 Max, D = 1.85 Max. On Request

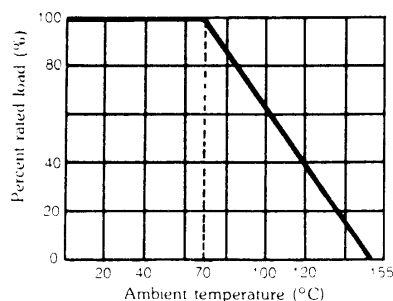
Small Size

Style	Dimension (mm)				
	Rating	L Max.	D Max.	d $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	H ± 3
CR-25PS-S	0.25W	4.2	2.0	0.5	28
CR-50PS-S	0.5W	9	3.0	0.6	28
CR-50PS-SS	0.5W	6.8	2.5	0.6	28
CR-100PS-S	1W	12	5.0	0.7	28
CR-200PS-S	2W	16	5.5	0.8	28

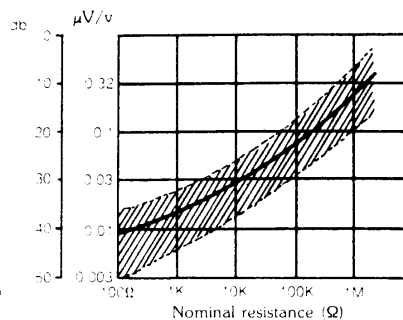
Rating

Style	Rating Wattage	Max. Working V.	Max. Overload V.	Resistance Range
CR-12	0.125W	200V	400V	1 Ω - 1Meg Ω
CR-25	0.25W	250V	500V	1 Ω - 10Meg Ω
CR-50	0.5W	350V	700V	1 Ω - 10Meg Ω
CR-100	1W	500V	1,000V	1 Ω - 10Meg Ω
CR-200	2W	500V	1,000V	1 Ω - 10Meg Ω

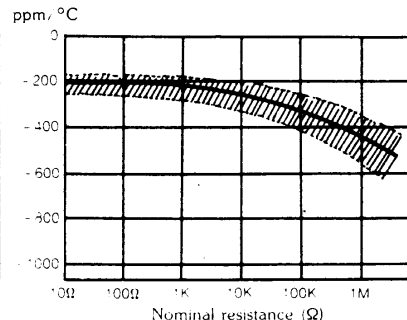
Derating Curve



Current Noise



Temp Coefficient



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Performance Specifications

Characteristics	Limits		Test Methods															
	RANGE	T.C.R.																
T.C.R. JIS-C-5202 5.2	1E-91K 100K-1M 1.1M-10M	0 -- 450PPM°C 0 -- 700PPM°C - 800 -- 1500PPM°C	Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (ppm/°C)}$ R1: Resistance value at room temperature (t1) R2: Resistance value at room temp. plus 100°C (t2) Test Pattern: Room temp., Room temp. + 100°C															
Dielectric withstanding voltage JIS-C-5202 5.7	No evidence of flashover mechanical damage, arcing or insulation breakdown.		Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively specified in the above list for 60 + 10/ - 0 seconds.															
Temperature cycling JIS-C-5202 7.4	Resistance change rate is ± (1% + 0.05Ω) Max. with no evidence of mechanical damage.		Resistance change after continuous five cycles for duty cycle specified below. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C ± 3°C</td> <td>30 minutes</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>10~15 minutes</td> </tr> <tr> <td>3</td> <td>+155°C ± 2°C</td> <td>30 minutes</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>10~15 minutes</td> </tr> </tbody> </table>	Step	Temperature	Time	1	-55°C ± 3°C	30 minutes	2	Room temp.	10~15 minutes	3	+155°C ± 2°C	30 minutes	4	Room temp.	10~15 minutes
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1	-55°C ± 3°C	30 minutes																
2	Room temp.	10~15 minutes																
3	+155°C ± 2°C	30 minutes																
4	Room temp.	10~15 minutes																
Short-time overload JIS-C-5202 5.5	Resistance change rate is ± (1% + 0.05Ω) Max. with no evidence of mechanical damage		Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.															
Load life in humidity JIS-C-5202 5.9	Resistance value		Resistance change after 1,000 hours operating at RCWV with duty cycle of 1.5 hours "on", 0.5 hour "off" in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95% relative humidity.															
	Normal type	Less than 100KΩ		± 3%														
		100KΩ or more		± 5%														
	Flame retardant type	Less than 100K		± 5%														
100KΩ or more		± 10%																
Load life JIS-C-5202 7.10	Resistance value		Permanent resistance change after 1,000 hours operating at RCWV with duty cycle of 1.5 hours "on", 0.5 hour "off" at 70°C ± 2°C ambient.															
	Normal type	Less than 56KΩ		± 2%														
		56KΩ or more		± 3%														
	Flame retardant type	Less than 100KΩ		± 5%														
100KΩ or more		± 10%																
Insulation resistance JIS-C-5202 5.6	Insulation resistance is 10,000 MΩ Min.		Resistors shall be clamped in the trough a 90° metallic V-block and shall be tested at DC. potential respectively specified in the above list for 60 + 10/ - 0 seconds.															
Terminal strength JIS-C-5202 6.1	No evidence of mechanical damage.		Direct load: Resistance to a 2.5kg direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads. Twist test: Terminal leads shall be bent through 90° at a point of about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.															
Resistance to soldering heat JIS-C-5202 6.4	Resistance change rate is ± (1% + 0.05Ω) Max. with no evidence of mechanical damage.		Permanent resistance change when leads immersed to 3.2-4.8mm from the body in 350°C ± 10°C solder for 3 ± 0.5 seconds.															
Solderability JIS-C-5202 6.5	95% coverage Min.		The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. of solder: 235°C ± 5°C Dwell time in solder: 3 + 0.5/ - 0 seconds															