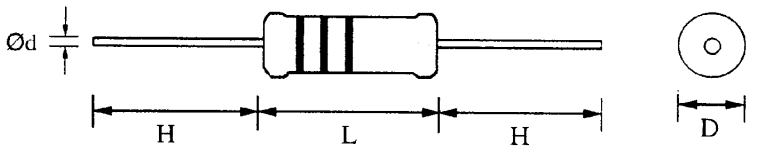
Royal Parts

Carbon Film Fixed Resistors

Dimension:



Dimension (mm)

Normal Size				Small Size				
STYLE	L Max.	D Max.	d ± 0.02 -0.05	STYLE	L Max.	D Max.	d+0.02 −0.05	H ± 3
CR - 12PS	3.5	1.85	0.5	CR -25PS-S	3.5	1.85	0.5	28
CR - 25PS	6.8	2.50	0.6	CR -50PS-S	9.0	3.00	0.6	28
CR - 50PS	10.0	3.50	0.6	CR -50PS-SS	6.8	2.50	0.6	28
CR - 100PS	16.0	5.50	0.8	CR -100PS-S	12.0	5.00	0.7	28
CR - 200PS	17.5	6.50	0.8	CR -200PS-S	16.0	5.50	0.8	28
				CR -300PS-S	17.5	6.50	0.8	28

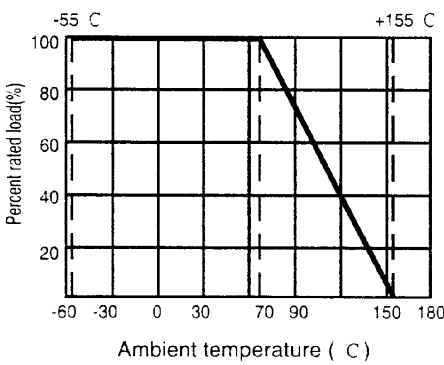
*Flame retardant type available

Rating

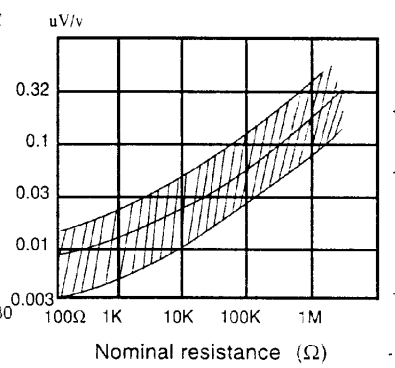
STYLE	Rating	Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range
CR - 12/25-S	0.125W	200V	400V	400V	1Ω - 1MΩ
CR - 25/50-SS	0.25W	250V	500V	500V	1Ω - 10MΩ
CR - 50/-S	0.5W	350V	700V	700V	1Ω - 10MΩ
CR - 100/-S	1W	500V	1,000V	1,000V	1Ω - 10MΩ
CR - 200/-S	2W	500V	1,000V	1.000V	1Ω - 10MΩ
CR - 300-S	3W	500V	1,000V	1,000V	1Ω - 10MΩ

*Too low or too high ohmic value can be supplied on a case to case basis.

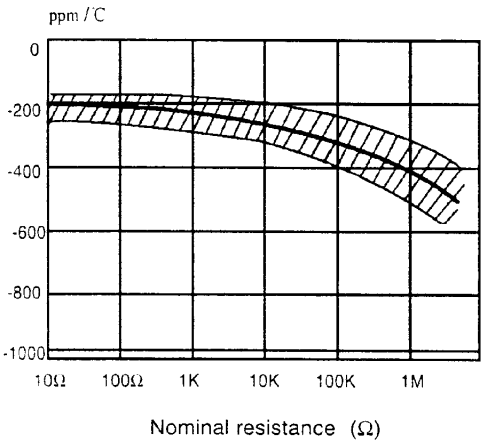
Derating Curve:



Current Noise:



Temp. Coefficient:



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Performance Specification

Characteristics	Test Methods	Limits
Temperature coefficient JIS - C- 5202 5.2	Natural resistance change per temp. degree centigrade $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6$ (PPM/℃) R_1: Resistance value at room temperature (t_1) R_2: Resistance value at room temp. + 100℃ (t_2) Test pattern: Room temp., Room temp + 100℃	RANGE / T.C.R ≤ 10Ω: 0 ~ ± 350PPM/℃ 11Ω - 99K: 0 ~ ± 450PPM/℃ 100K-1M: 0 ~ - 700PPM/℃ 1M1Ω - 10M: 0 ~ -1500PPM/℃
Dielectric withstanding voltage JIS - C- 5202 5.7	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.	No evidence of flashover mechanical damage, arcing or insulation break down.
Temperature cycling JIS - C - 5202 7.4	Resistance change after continuous five cycles for duty cycle specified below: Step 1: -55℃ ± 3℃, 30 mins Step 2: Room temp., 10~15 mins Step 3: +155℃ ± 2℃, 30 mins Step 4: Room temp., 10~15 mins	Resistance change rate is ± (1%+0.05Ω) Max. with no evidence of mechanical damage.
Short - time overload JIS - C - 5202 5.5	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.	Resistance change rate is ± (1%+0.05Ω) Max. with no evidence of mechanical damage.
Load life in humidity JIS - C - 5202 7.9	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℃ ± 2℃ and 90 to 95% relative humidity.	Resistance value / △R/R *Normal type*: Less than 100KΩ: ± 3%; 100KΩ or more: ± 5% *Flame retardant type*: Less than 100KΩ: ± 5%; 100KΩ or more: ± 10%
Load life JIS - C - 5202 7.10	Permanent resistance change after 1,000 hours operating at RCWV with duty cycle of 1.5 hours "ON", 0.5 hour "OFF" at 70℃ ± 2℃ ambient.	Resistance value / △R/R *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	Resistors shall be clamped in the trough of a 90° metallic V - block and shall be tested at DC. potential respectively specified in the above list for 60 + 10 / -0 seconds	Insulation resistance is 10,000 MΩ Min.
Terminal strength JIS - C - 5202 6.1	**Direct load**: Resistance to a 2.5 kg 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.	No evidence of mechanical damage
Resistance to soldering heat JIS - C - 5202 6.4	Permanent resistance change when leads immersed to 3.2 - 4.8 mm from the body in 350 ℃ ± 10℃ solder for 3 ± 0.5 seconds.	Resistance change rate is ± (1%+0.05Ω) Max. with no evidence of mechanical damage.
Solderability JIS -C - 5202 6.5	The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. of solder: 235℃ ± 5℃ Dwell time in solder: 3 +0.5 / -0 seconds.	95% coverage Min.
Resistance to solvent JIS - C - 5202 6.9	Specimens shall be immersed in a bath of trichroethane. completely for 3 mins with ultrasonic.	No deterioration of protective coating and markings.

*RCWV=Rated Continuous Working Voltage= $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$