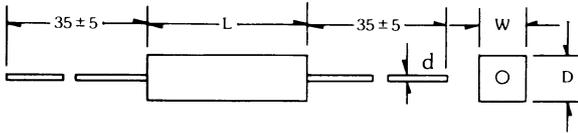


# Cement Fixed Resistors

## Features

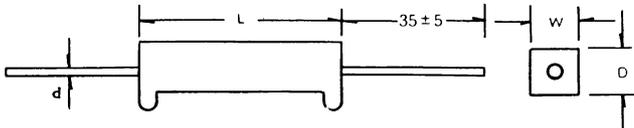
- Extremely small and sturdy mechanically safe.
- Excellent flame resistance and moisture resistance.
- Self-extinguishing.
- Non-inductive types available for all Royal Ohm Cement Types.
- Too low or too high ohmic value on Wirewound and Power Film Type can be supplied on a case to case basis.

### (1) PRW Type



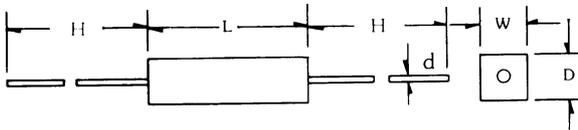
	Dimension (mm)				Resistance Range		
	W±1	D±1	L±1	d $\begin{matrix} +0.02 \\ -0.05 \end{matrix}$	Wirewound	Power Film	
2W	7	7	18	0.7	0.1Ω~ 27Ω	28Ω~ 33KΩ	
3W	8	8	22	0.7	0.1Ω~ 39Ω	40Ω~ 56KΩ	
<b>1/6000</b>	5W	10	9	22	0.8	0.1Ω~ 47Ω	48Ω~100KΩ
	7W	10	9	35	0.8	0.1Ω~ 680Ω	681Ω~200KΩ
<b>1/6200</b>	10W	10	9	49	0.8	0.1Ω~ 910Ω	911Ω~200KΩ
	15W	12.5	11.5	49	0.8	1 Ω~1 KΩ	
<b>1/7000</b>	20W	14.5	13.5	60 64	0.8	2 Ω~1.2KΩ	

### (1-1) PRWA Type



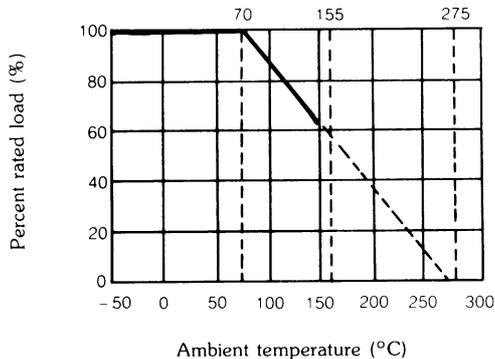
	Dimension (mm)				Resistance Range		
	W±1	D±1	L±1	d $\begin{matrix} +0.02 \\ -0.05 \end{matrix}$	Wirewound	Power Film	
	5W	10	9	22	0.8	0.1Ω~ 47Ω	48Ω~100KΩ
	7W	10	9	35	0.8	0.1Ω~680Ω	681Ω~200KΩ
	10W	10	9	49	0.8	0.1Ω~910Ω	911Ω~200KΩ

### (1-2) PRWC Type

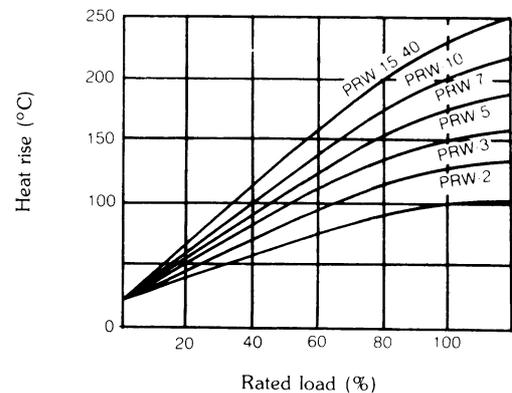


	Dimension (mm)					Resistance Range		
	W±1	D±1	L±1	d $\begin{matrix} +0.02 \\ -0.05 \end{matrix}$	H±5	Wirewound	Power Film	
	3W	6	6	20	0.7	28	1Ω~ 27Ω	28Ω~ 33KΩ
	5W	6	6	25	0.8	35	1Ω~100Ω	101Ω~100KΩ
	7W	9	9	25	0.8	35	1Ω~100Ω	101Ω~100KΩ

## Derating Curve



## Heat Rise Chart



## Performance Specifications

Characteristics	Limits	Test Methods															
Temperature coefficient JIS-C-5202 5.2	± 350PPM/°C Max. < 20Ω ± 400PPM/°C	Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (ppm/°C)}$ R <sub>1</sub> : Resistance value at room temperature (t <sub>1</sub> ) R <sub>2</sub> : Resistance value at room temp. plus 100°C (t <sub>2</sub> ) 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 break down.	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 ± (2% + 0.05Ω) Max. with no evidence of mechanical damage	Resistance change after continuous five cycles for duty cycle specified below. <table border="1" style="margin-left: auto; margin-right: auto;"> <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
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															
Humidity (Steady state) JIS-C-5202 7.5	Resistance change rate is ± (5% + 0.05Ω) Max. with no evidence of mechanical damage	Temporary resistance change after a 240 hours exposure in a humidity test chamber controlled at 40°C ±2°C and 90 to 95% relative humidity.															
Short-time overload JIS-C-5202 5.5	Resistance change rate is ± (5% + 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 7.9	Resistance change rate is ± (5% + 0.05Ω) Max. with no evidence of mechanical damage	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.															
Load life JIS-C-5202 7.10	Resistance change rate is ± (5% + 0.05Ω) Max. with no evidence of mechanical damage	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.															
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 to 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															