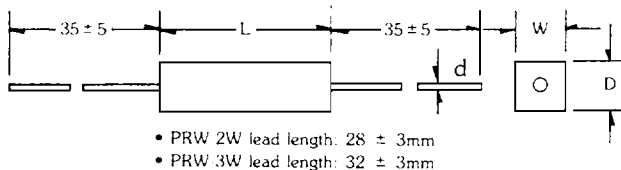


Cement Fixed Resistors

Features:

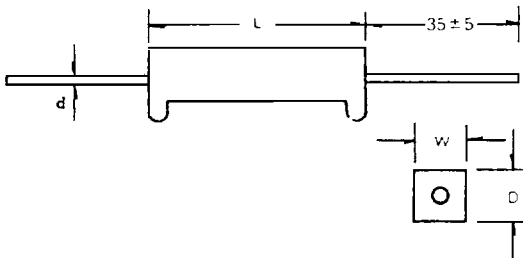
- Extremely small and sturdy mechanically safe.
- Excellent flame resistance and moisture resistance.
- Self-extinguishing.
- Non-inductive types available for all Royal Ohm Cement Types.
- Too low or too high ohmic value on Wirewound and Power Film Type can be supplied only case by case.

(1) PRW Type



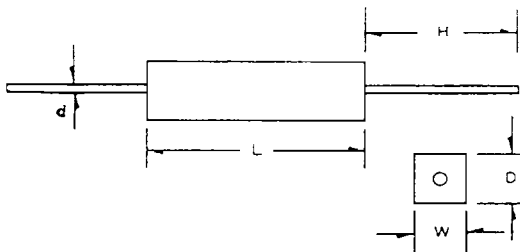
Style	Dimension (mm)				Resistance Range	
	W±1	D±1	L±1	d $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	Wirewound	Power Film
PRW-2W	7	7	18	0.7	0.1Ω~ 27Ω	28Ω~ 33KΩ
PRW-3W	8	8	22	0.7	0.1Ω~ 39Ω	40Ω~ 56KΩ
PRW-5W	10	9	22	0.8	0.1Ω~ 47Ω	48Ω~100KΩ
PRW-7W	10	9	35	0.8	0.1Ω~ 680Ω	681Ω~200KΩ
PRW-10W	10	9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

(1-1) PRWA Type



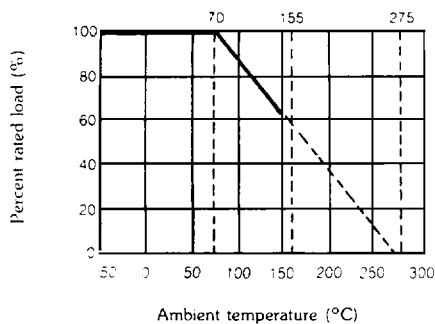
Style	Dimension (mm)				Resistance Range	
	W±1	D±1	L±1	d $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	Wirewound	Power Film
PRWA-5W	10	9	22	0.8	0.1Ω~ 47Ω	48Ω~100KΩ
PRWA-7W	10	9	35	0.8	0.1Ω~680Ω	681Ω~200KΩ
PRWA-10W	10	9	49	0.8	0.1Ω~910Ω	911Ω~200KΩ

(1-2) PRWC Type

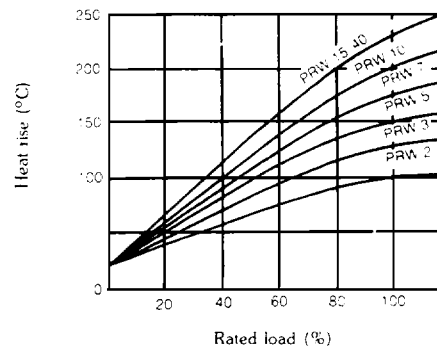


Style	Dimension (mm)					Resistance Range	
	W±1	D±1	L±1	d $\begin{smallmatrix} +0.02 \\ -0.05 \end{smallmatrix}$	H±5	Wirewound	Power Film
PRWC-3W	6	6	20	0.7	28	1Ω~ 27Ω	28Ω~ 33KΩ
PRWC-5W	6	6	25	0.8	35	1Ω~100Ω	101Ω~100KΩ
PRWC-7W	9	9	25	0.8	35	1Ω~100Ω	101Ω~100KΩ

Derating Curve



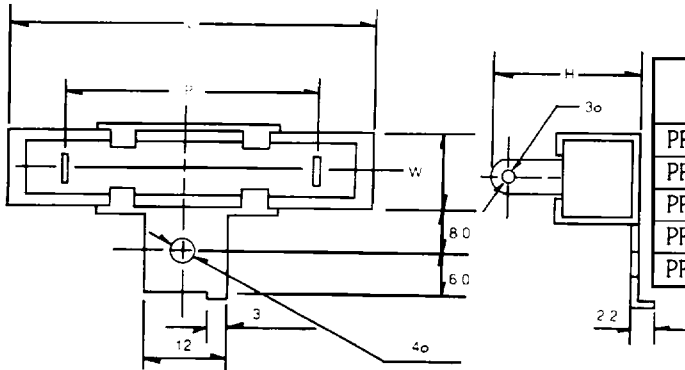
Heat Rise Chart



MEGGS028

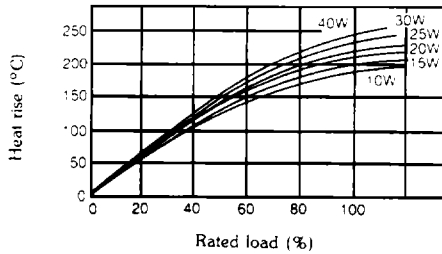
Cement Fixed Resistors

(2) PRT Type

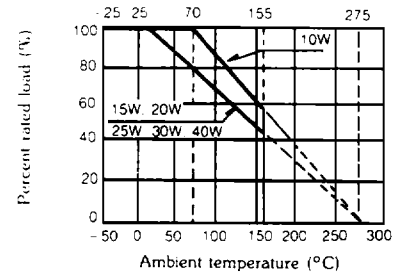


Style	Dimension (mm) ±1mm				Resistance Range	
	W	L	P	H	Wirewound	Power Film
PRT-10W	10.0	48	32	18	1Ω~820Ω	821Ω~100KΩ
PRT-15W	12.5	48	32	21	1Ω~1 KΩ	
PRT-20W	12.5	63	45	21	2Ω~1.2KΩ	
PRT-30W	19.0	75	56	32	3Ω~1.5KΩ	
PRT-40W	19.0	90	70	32	6Ω~1.5KΩ	

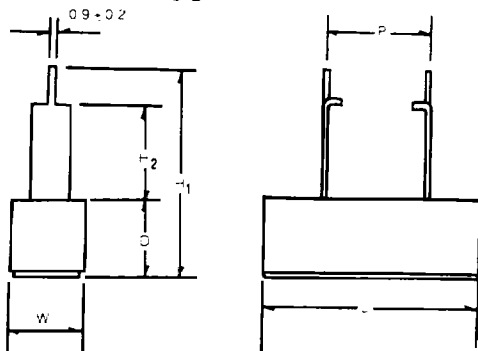
Heat Rise Chart



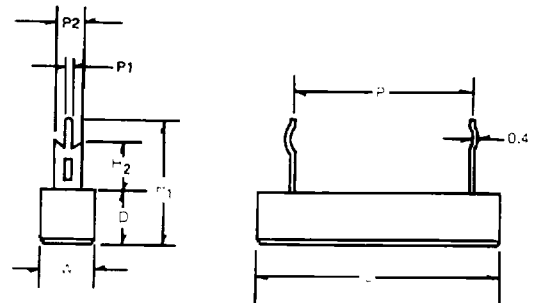
Derating Curve



(3) PRVA Type

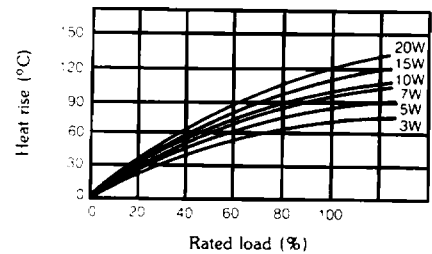


(4) PRVB Type

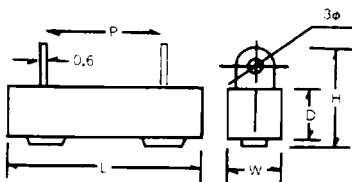


Style	Dimension (mm)								Resistance Range	
	±1				±0.2				Wirewound	Power Film
PRVA+PRVB	W	D	L	P	P ₂	H ₁	H ₂	P ₁		
3W	10.0	9.0	22	9.5	5	25.0	10.5	1.3	0.1Ω~47Ω	48Ω~33KΩ
5W	10.0	9.0	27\25	15\9.5	5	25.0	10.5	1.3	0.1Ω~200Ω	201Ω~56KΩ
7W	10.0	9.0	35	22	5	25.0	10.5	1.3	0.1Ω~560Ω	561Ω~100KΩ
10W	10.0	9.0	48	35\32	5	25.0	10.5	1.3	1 Ω~820Ω	821Ω~100KΩ
15W	12.5	11.5	48	32	5	27.5	10.5	1.5	1 Ω~1 KΩ	
20W	12.5	13.5	63	45	5	29.5	10.5	1.5	2 Ω~1.2KΩ	

Heat Rise Chart



(5) PRU Type



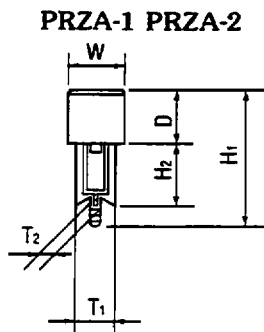
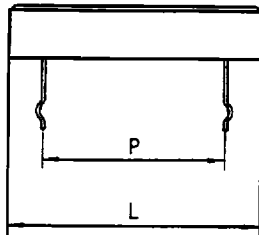
Style	Dimension (mm) ±1mm					Resistance Range	
	W	D	L	P	H	Wirewound	Power Film
PRU-10W	10.0	9.0	48	32	18	1Ω~820Ω	821Ω~100KΩ
PRU-15W	12.5	11.5	48	32	21	1Ω~1 KΩ	
PRU-20W	12.5	13.5	63	45	21	2Ω~1.2KΩ	
PRU-30W	19.0	19.0	75	56	32	3Ω~1.5KΩ	
PRU-40W	19.0	19.0	90	70	32	6Ω~1.5KΩ	

Cement Fixed Resistors

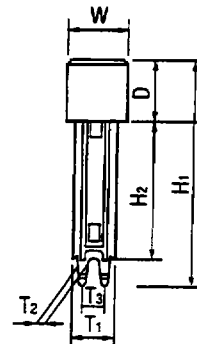
(6) PRZA-1 PRZA-2 PRZC PRZD Type

Physical Specifications

PRZA-1 PRZA-2 PRZC PRZD



PRZC PRZD



Recommendable Hole

Power Rating	Dimensions				P
	PRZA-1	PRZA-2	PRZC	PRZD	
5W					15
7W					22
10W					35
15W					32
20W					45

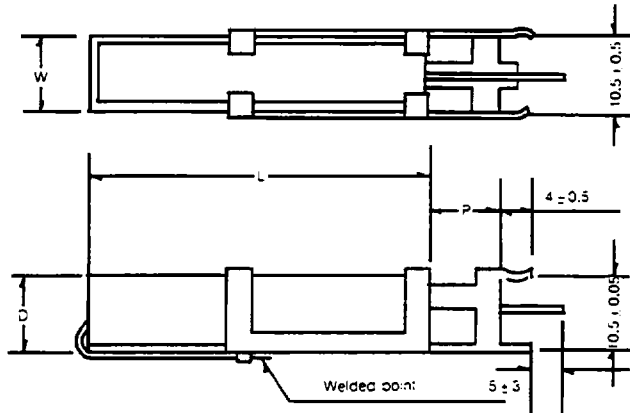
Dimension

Power Rating	Type	Dimension									Resistance Range	
		W±1	D±1	L	P±1.5	T1±1	T2±0.2	T3±0.5	H1+2/-1	H2+2/-1	Wirewound	Power Film
5W	PRZA-1	10	9	25±1 27±1	9.5 15	7	1.6		24	10	01Ω~200Ω	201Ω~56KΩ
	PRZA-2	10	9	27±1	15	7	1.6		39	25		
	PRZC	10	9	27±1	*15	7	1.5	3.5	36	22		
	PRZD	10	9	27±1	15	7	1.5	3.5	24	10		
7W	PRZA-1	10	9	35±1	22	7	1.6		24	10	01Ω~560Ω	561Ω~100KΩ
	PRZA-2	10	9	35±1	22	7	1.6		39	25		
	PRZC	10	9	35±1	*22	7	1.5	3.5	36	22		
	PRZD	10	9	35±1	22	7	1.5	3.5	24	10		
10W	PRZA-1	10	9	48±1.5	32 35	7	1.6		24	10	1Ω~820Ω	821Ω~100KΩ
	PRZA-2	10	9	48±1.5	32 35	7	1.6		39	25		
	PRZC	10	9	48±1.5	*32 *35	7	1.5	3.5	36	22		
	PRZD	10	9	48±1.5	32 35	7	1.5	3.5	24	10		
15W	PRZA-1	12.5	11.5	48±1.5	32	10	3		35	15	1Ω~1 KΩ	
	PRZA-2	12.5	11.5	48±1.5	32	10	3		47	30		
	PRZC	12.5	11.5	48±1.5	*32	10	2	5	47	30		
20W	PRZA-1	12.5	13.5	63±1.5	45	10	3		35	15	2Ω~1.2KΩ	
	PRZA-2	12.5	13.5	63±1.5	45	10	3		47	30		
	PRZC	12.5	13.5	63±1.5	*45	10	2	5	47	30		

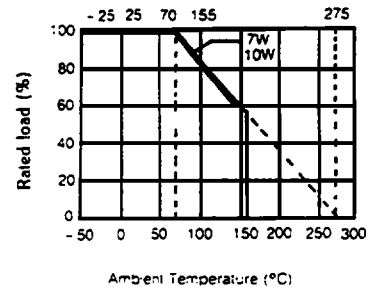
* PRZC Type Pitch Tolerance = +2~+6

Cement Fixed Resistors

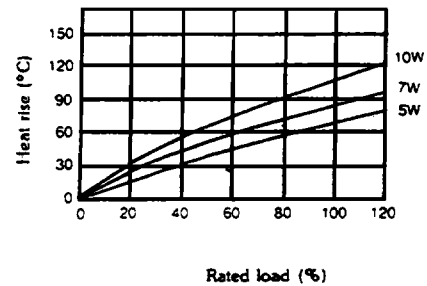
(7) PRS TYPE



Derating Curve

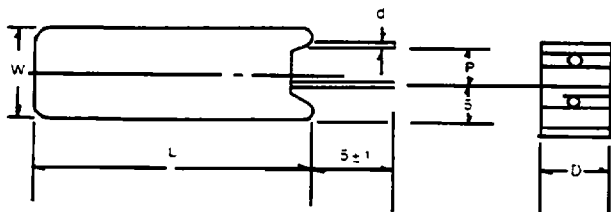


Heat Rise Chart



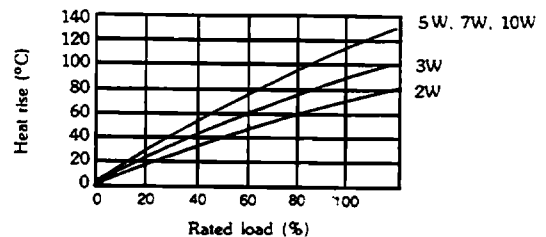
Style	Dimension (mm) ±1mm				Resistance Range	
	W	D	L	P	Wirewound	Power Film
PRS-5W	10	9	22	5	0.1Ω~47Ω	48Ω~100KΩ
PRS-7W	10	9	35	10	0.1Ω~680Ω	681Ω~200KΩ
PRS-10W	10	9	48	10	0.1Ω~910Ω	911Ω~200KΩ

(8) PRM TYPE



• 2W, 3W, 5W: PRMA-10W leads centered

Heat Rise Chart



Style	Dimension (mm) ±1mm					Resistance Range	
	W±1	D±1	L±1	d +0.02 -0.05	P±1	Wirewound	Power Film
PRM-2W	11.5	7.5	20	0.7	5.0	0.1Ω~27Ω	28Ω~33KΩ
PRM-3W	12.5	8.5	25	0.7	5.0	0.1Ω~39Ω	40Ω~56KΩ
PRM-5W	12.5	9.0	25	0.8	5.0	0.1Ω~47Ω	48Ω~100KΩ
PRM-7W	12.5	9.0	38	0.8	5.0	0.1Ω~680Ω	681Ω~200KΩ
PRM-10W	12.5	9.0	50	0.8	5.0	0.1Ω~910Ω	911Ω~200KΩ
PRMA-5W	12.5	9.0	25	0.8	7.5	0.1Ω~47Ω	48Ω~100KΩ
PRMA-10W	16.0	12.0	35	0.8	7.5	0.1Ω~560Ω	561Ω~100KΩ

Cement Fixed Resistors

Performance Specifications

Characteristics	Limits	Test Methods															
Temperature coefficient JIS-C-5202 5.2	$\pm 350\text{PPM}/^{\circ}\text{C}$ Max. $< 20\Omega \pm 400\text{PPM}/^{\circ}\text{C}$	Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (ppm}/^{\circ}\text{C)}$ R ₁ : Resistance value at room temperature (t ₁) R ₂ : Resistance value at room temp. plus 100°C (t ₂) 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 $\pm (2\% + 0.05\Omega)$ 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 style="text-align: center;">1</td> <td style="text-align: center;">-55°C ± 3°C</td> <td style="text-align: center;">30 minutes</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">Room temp.</td> <td style="text-align: center;">10~15 minutes</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">+155°C ± 2°C</td> <td style="text-align: center;">30 minutes</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">Room temp.</td> <td style="text-align: center;">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 $\pm (5\% + 0.05\Omega)$ 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 $\pm (5\% + 0.05\Omega)$ 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 $\pm (5\% + 0.05\Omega)$ 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 $\pm (5\% + 0.05\Omega)$ 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 $\pm (1\% + 0.05\Omega)$ 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															