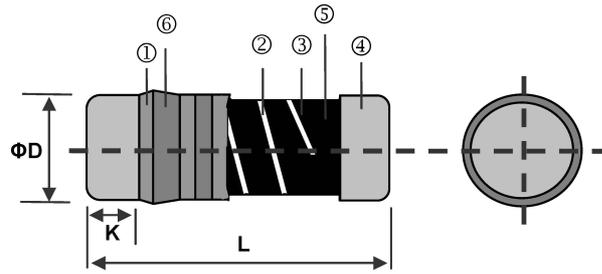


# Metal Film Precision Resistor – MR Series

## Construction



① Insulation Coating	④ Electrode Cap
② Trimming Line	⑤ Resistor Layer
③ Ceramic Rod	⑥ Marking

## Features

- Excellent overall stability
- Tight tolerance down to  $\pm 0.1\%$
- Extremely low TCR down to  $\pm 10 \text{ PPM}/^\circ\text{C}$
- High power rating up to 1 Watts

## Dimensions

Unit: mm

Type	L	$\Phi D$	K min.	Weight (g) (1000pcs)	Packaging
					180mm (7")
MR0204	$3.50 \pm 0.2$	$1.40 \pm 0.15$	0.5	18.7	3,000EA
MR0207	$5.90 \pm 0.2$	$2.20 \pm 0.20$	0.5	80.9	2,000EA

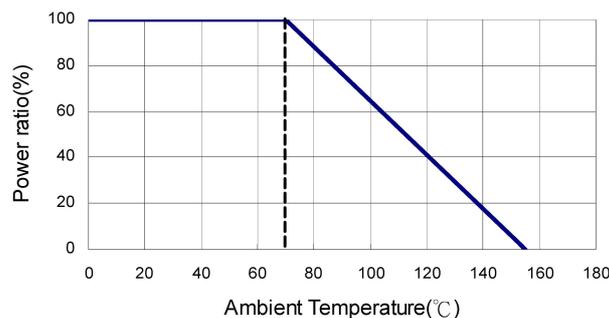
## Applications

- Automotive
- Telecommunication
- Medical Equipment

## Part Numbering

MR	0207	B	T	B	T	1001
Product Type	Dimensions (L×ΦD)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	0204: 3.5x1.4 0207: 5.9x2.2	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$ J: $\pm 5\%$	T: Taping Reel B: Bulk	B: $\pm 10$ N: $\pm 15$ C: $\pm 25$ D: $\pm 50$ E: $\pm 100$	T: 1W U: 1/2W V: 1/4W	0100: 10Ω 1000: 100Ω 2201: 2200Ω 1001: 1KΩ 1004: 1MΩ

## Derating Curve



### Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range					TCR (PPM/°C)
					±0.1%	±0.25%	±0.5%	±1%	±5%	
0204	1/4W	-55 ~ +155°C	200V	400V	100Ω-20KΩ	10Ω-20KΩ				±10
					100Ω-100KΩ	10Ω-100KΩ				±15
					100Ω-270KΩ	10Ω-330KΩ	4.7Ω-560KΩ	4.7Ω-1MΩ		±25
					100Ω-270KΩ	1Ω-330KΩ	1Ω-1MΩ	1Ω-10MΩ		±50
					-				5.11MΩ-10MΩ	-
					0.1Ω-0.91Ω					
0207	1/2W	-55 ~ +155°C	300V	500V	100Ω-20KΩ	10Ω-20KΩ				±10
					100Ω-100KΩ	10Ω-100KΩ				±15
					100Ω-400KΩ	10Ω-400KΩ	10Ω-560KΩ	10Ω-560KΩ		±25
					100Ω-400KΩ	1Ω-330KΩ	1Ω-1MΩ	1Ω-5.1MΩ		±50
					-				0Ω-0.91Ω	

### High Power Rating Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range					TCR (PPM/°C)
					±0.1%	±0.25%	±0.5%	±1%	±5%	
0207	1W	-55 ~ +155°C	350V	700V	100Ω-100KΩ	10Ω-100KΩ				±15
					100Ω-100KΩ	4.7Ω - 1MΩ	4.7Ω - 1MΩ	4.7Ω-560KΩ		±25
					100Ω-100KΩ	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 2.2MΩ		±50
					-				0.1Ω - 0.91Ω	

### Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	+20/-15/+20/+100/+20°C
Short Time Overload	ΔR±0.5%	RCWV*2.5 or Max. overload voltage for 5 seconds
Endurance	ΔR±2%	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	ΔR±2%	40±2°C, 90~95% R. H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	ΔR±2%	at +155°C for 1000 hrs
Solderability	95%min. coverage	245±5°C for 3 seconds
Resistance to Soldering Heat	ΔR±0.5%	260±5°C for 10 seconds

#### Reference Standards: JIS-C 5201-1

#### Storage Temperature: 25±3°C; Humidity < 80%RH