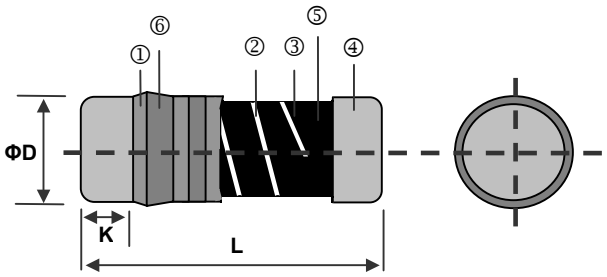
Metal Film Precision Resistor－CMR Series

■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 ±0.1%
－Extremely low TCR down to ±10 PPM/°C
－High power rating up to 1 Watts

■Dimensions

Unit: mm

Type	L	ΦD	K min.	Weight (g) (1000pcs)	Packaging 180mm (7")
CMR0204	3.50±0.20	1.40±0.15	0.5	18.7	3,000EA
CMR0207	5.90±0.20	2.20±0.20	0.5	80.9	2,000EA

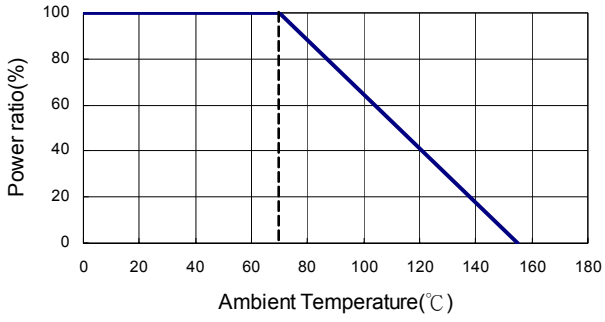
■Applications

－Automotive
－Telecommunication
－Medical Equipment
－Measurement/Testing Equipment

■Part Numbering

CMR	0204	D	1000	D	V	T
Product Type	Dimensions (L×ΦD)	Resistance Tolerance	Resistance	TCR (PPM/°C)	Power Rating	Packaging Code
	0204: 3.5x1.4 0207: 5.9x2.2	B: ±0.1% C: ±0.25% D: ±0.5% F: ±1% J: ±5%	0100: 10Ω 1000: 100Ω 2201: 2200Ω 1001: 1KΩ 1004: 1MΩ R0R0: 0Ω R050: 0.05Ω R100: 0.1Ω	B: ±10 N: ±15 C: ±25 D: ±50 E: ±100 - : No Specified	T: 1W U: 1/2W V: 1/4W	T: Taping Reel B: Bulk

■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	49.9Ω-20KΩ					±10
					49.9Ω-300KΩ					±15
					10Ω-1MΩ			10Ω-4.7MΩ		±25
					10Ω-1MΩ	1Ω-1MΩ		1Ω-10MΩ		±50
					-			0.1Ω-10MΩ		±100
	Jumper: 2A				0Ω(<15mΩ)					-
0207	1/2W	-55 ~ +155°C	300V	500V	49.9Ω-20KΩ					±10
					49.9Ω-300KΩ					±15
					10Ω-1MΩ			10Ω-4.7MΩ		±25
					10Ω-1MΩ	1Ω-1MΩ		1Ω-10MΩ		±50
					-			0.1Ω-10MΩ		±100
	Jumper: 4A				0Ω(<15mΩ)					-

■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	49.9Ω-100KΩ					±15
					10Ω - 1MΩ					±25
					10Ω-1MΩ	1Ω - 1MΩ		1Ω - 10MΩ		±50
					-			0.1Ω –10MΩ		±100

■Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	-55°C~+125°C, 25°C is the reference temperature
Short Time Overload	±(0.15%+0.05Ω)	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	≥10G	Max. overload voltage for 1 minute
Endurance	±(0.5%+0.05Ω)	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”
Damp Heat with Load	±(1.0%+0.05Ω)	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	±(1.0%+0.05Ω)	at +155°C for 1000 hrs
Bending Strength	±(0.5%+0.05Ω)	Bending once for 5 seconds with 2mm
Solderability	95% min. coverage	245±5°C for 3 seconds
Resistance to Soldering Heat	±(0.5%+0.05Ω)	260±5°C for 10 seconds
Voltage Proof	No breakdown or flashover	1.42 times RCWV (RMS) for 1 minute
Leaching	Individual leaching area ≦5% Total leaching area ≦ 10%	260±5°C for 30 seconds
Rapid Change of Temperature	±(0.5%+0.05Ω)	-55°C to +125°C, 5 cycles

■ **Reference Standards: IEC 60115-1；JIS-C 5201-1**

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