

METAL FILM PRECISION RESISTOR

- CMR SERIES -

FEATURES

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



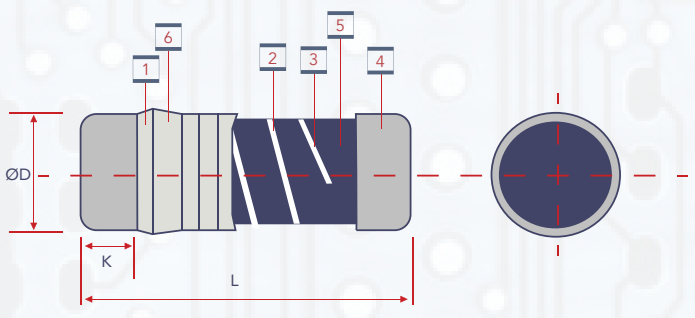
APPLICATIONS

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

PART NUMBERING

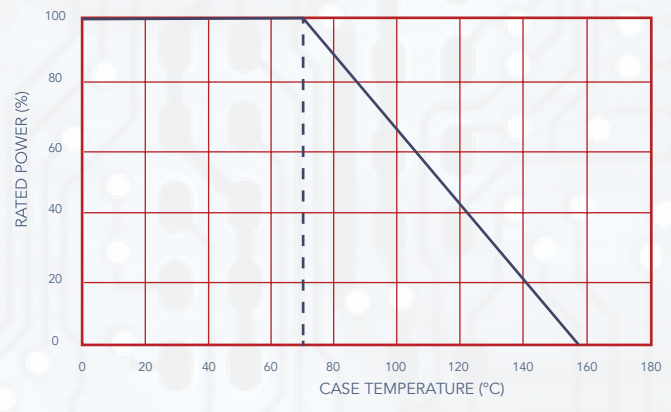
CMR	0204	D	1000	D	V	T
TYPE	DIMENSIONS (L x \varnothing D)	RESISTANCE TOLERANCE	RESISTANCE	TCR (PPM/ $^{\circ}\text{C}$)	POWER RATING	PACKAGING CODE
CMR SERIES	0204: 3.5 x 1.4 0207: 5.9 x 2.2	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 1\%$ F: $\pm 2\%$ J: $\pm 5\%$	0100: 10 Ω 1000: 100 Ω 2201: 2200 Ω 1001: 1K Ω 1004: 1M Ω R0R0: 0 Ω R050: 0.05 Ω R100: 0.1 Ω	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

CONSTRUCTION



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

DERATING CURVE



TYPE	L	\varnothing D	K MIN	WEIGHT (G) (1000PCS)	PACKAGING
					180MM (7")
CMR0204	3.50 \pm 0.20	1.40 \pm 0.15	0.5	18.7	3,000 EA
CMR0207	5.90 \pm 0.20	2.20 \pm 0.20		80.9	2,000 EA

STANDARD ELECTRICAL SPECIFICATIONS

TYPE	POWER RATING AT 70°C	OPERATING TEMP RANGE	MAX OPERATING VOLTAGE	MAX OVERLOAD VOLTAGE	RESISTANCE RANGE					T.C.R. (PPM / °C)	
					±0.1%	±0.25%	±0.5%	±1%	±5%		
0204	1/4 W	-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	1/2 W		-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

TYPE	POWER RATING AT 70°C	OPERATING TEMP RANGE	MAX OPERATING VOLTAGE	MAX OVERLOAD VOLTAGE	RESISTANCE RANGE					T.C.R. (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

ITEMS	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 2mm
Solderability	95% coverage Min.	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 +155°C, 5 cycles

Reference Standards: IEC 60115-1, JIS-C 5201-1
Storage Temperature: 25±3°C: Humidity <80%RH

