

# Carbon Film Resistors

- SMD style carbon resistor
- Free direction for mounting due to cylindrical design
- High solder ability due to specially plated electrodes
- Electrodes strength is higher than flat chip resistors
- Lower current noise than thick film flat chip resistors
- Suitable for reflow, flow and iron soldering
- Applications: Automotive, telecommunication, medical equipment, measurement / testing equipment



## GENERAL SPECIFICATIONS

Model	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range	
					±2%	±5%
0204	1/4W[V]	-55°C ~ +155°C	250V	500V	1Ω-1MΩ	
0207	1/2W[U]		300V	600V	1Ω-1MΩ	
0309	1W[T]		350V	700V	1Ω-1MΩ	

## HIGH POWER RATING SPECIFICATIONS

Model	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range	
					±2%	±5%
0207	1W[T]	-55°C ~ +155°C	350V	700V	1Ω-1MΩ	
0309	2W[S]		350V	700V	1Ω-1MΩ	

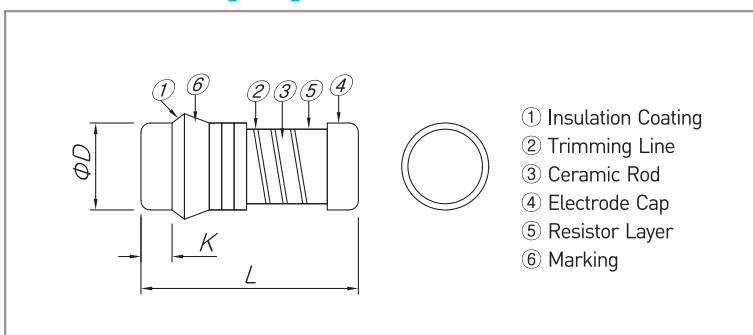
## CHARACTERISTICS

Values in [ ] mean change in Ω after test

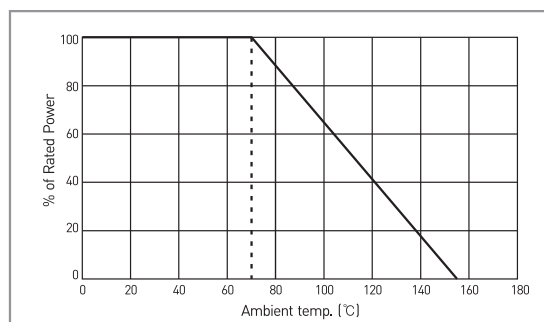
Short Time Overload	±[1.0%+0.05Ω]	RCW*2.5 or maximum overload voltage for 5 seconds
Endurance	±[3.0%+0.05Ω]	70±2°C, Max. working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Damp Heat with Load	±[5.0%+0.05Ω]	40±2°C, 90-95% RH, Max. working voltage for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Solderability	95% coverage minimum	245±5°C for 3 seconds
Resistance to Soldering Heat	±[1.0%+0.05Ω]	260±5°C for 10 seconds

\* Reference standards : JIS-C 5201-1, Storage temperature : 25±3°C; Humidity < 80%RH

## DIMENSIONS [mm]



## DERATING CURVE



Model	L	ΦD	K min.	Weight(g) (1000pcs)	Packaging	
					180mm (7")	330mm (13")
CFS0204	3.50±0.20	1.40±0.15	0.5	19	3,000pcs	-
CFS0207	5.90±0.20	2.20±0.20	0.5	81	2,000pcs	-
CFS0309	8.50±0.20	3.20±0.20	0.5	95	-	2,500pcs

## ORDERING PROCEDURE EXAMPLE

Ordering Example	Model	Power Rating	Resistance	Tolerance	Code
CFS0204 V1R20GT	CFS0204	V[1/4W]	1.2Ω	G[±2%]	T(Taping Reel)
CFS0207 U1000JT	CFS0207	U[1/2W]	100Ω	J[±5%]	T(Taping Reel)
CFS0309 S1001JB	CFS0309	S[2W]	1KΩ	J[±5%]	B(Bulk)