

# Carbon Film Resistors

## Carbon Film Resistors are Cost-Effective Option

### ▶ Preview

Providing design engineers with an economical power resistor with high quality performance, Token Electronics now offers commercial grade low power carbon film resistors.

Designated the CF series, the resistors are available in both standard CFN and miniature CFS sizes, the conformally coated resistors offer high quality performance for applications that do not require surge protection or precision tolerances.

The commercial grade carbon CF series is available in flame retardant packaging and have ideal specifications for consumer electronic or electrical devices. The CF devices offer a wide resistance range for devices with power ratings up to 3W in standard CFN size, and 5W in miniature CFS sizes, delivering high quality performance for general purpose applications.

The CF series resistors are ideal for general use applications including electrical equipment, small appliances and consumer electronics, such as televisions and other high-volume products. The CF series feature standard tolerances is G ( $\pm 2\%$ ) and J ( $\pm 5\%$ ), with a resistance range from  $0.5\Omega$  to  $22M\Omega$ .

All CF series devices are RoHS-compliant, and compatible with high temperature soldering processes normally employed for lead free solders. Also, CF resistors are available in various forming styles and different leads for different applications. Contact us with your specific needs.

### ▶ Features

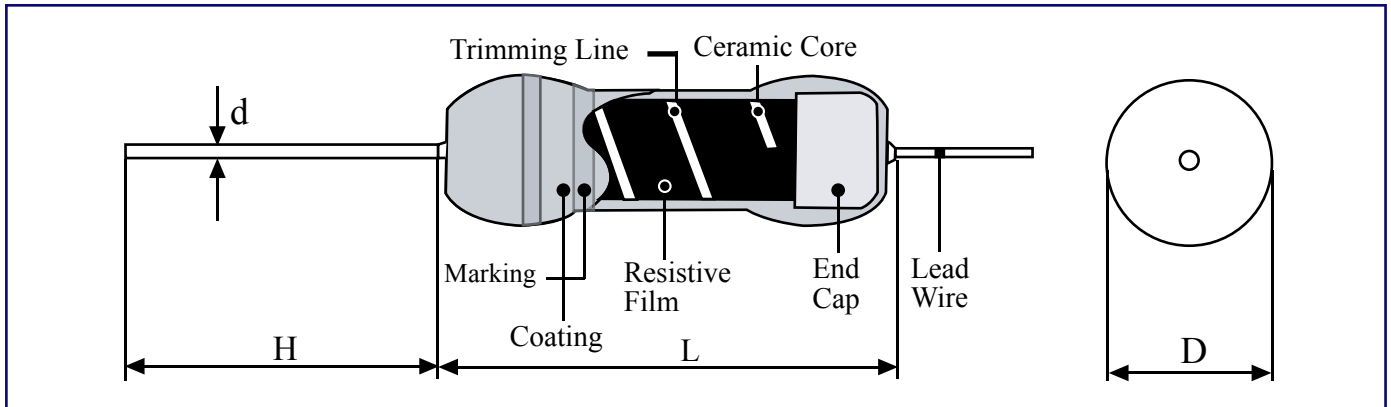
- Tolerances: G ( $\pm 2\%$ ), J ( $\pm 5\%$ )
- Power wattages up to 5W at  $+25^\circ\text{C}$
- Lead (Pb)-free and RoHS compliant
- Operating temperature range:  $-55^\circ\text{C}\sim+155^\circ\text{C}$
- Axial leaded type, high power at small sizes

### ▶ Applications

- Consumer Electronic
- Telecommunications
- Household Appliances
- Automotive, Computer, Instrumentation



## ► Dimensions & Specifications (Unit: mm)



Type		Dimension (mm)				Maximum Working Voltage	Maximum Overload Voltage	Resistance Tolerance	
CF	CFS	L	D	H	d±0.05			± 2%(G)	± 5%(J)
1/8 W	.	3.2±0.2	1.5±0.2	26±1	0.40~0.45	200	400	10Ω-470K	1Ω-4.7M
1/6 W	1/4 W	3.2±0.2	1.5±0.2	26±1	0.40~0.45	200	400	1Ω-10M	0.5Ω-22M
1/4 W	1/2 W	6.2±0.5	2.3±0.3	26±1	0.40~0.50	250	500	1Ω-10M	0.5Ω-22M
1/3 W	1/2 W	8.5±0.5	2.8±0.3	26±1	0.50~0.55	250	500	1Ω-10M	0.5Ω-22M
1/2 W	1 W	9.0±0.5	3.0±0.5	26±1	0.50~0.55	350	700	1Ω-10M	0.5Ω-22M
1 W	2 W	11±1.0	4.0±0.5	35±3	0.75~0.80	500	1000	1Ω-10M	0.5Ω-22M
2 W	3 W	15±1.0	5.0±0.5	35±3	0.75~0.80	500	1000	1Ω-10M	0.5Ω-22M
3 W	5 W	17±1.0	6.0±0.5	35±3	0.75~0.80	500	1000	1Ω-10M	0.5Ω-22M

## ► Electrical Performance

Test Items	Condition	Spec
Operating Temp.range	-55°C ~ +155°C	
Short Time Over Load	2.5 Times of rated voltage for 5sec.	± 1%
Load Life	70 °C on-off cycle 1,000hrs.	± 5%
Moisture-Proof Load Life	40 °C 95% RH on-off cycle 1,000hrs	± 5%
Soldering After Resistance	350 °C for 3sec.	± 0.5%
Temperature Cycle	-30 °C~85 °C 5cycles	± 2%
Resistance Temperature Coefficient	1Ω~22KΩ 22KΩ~510KΩ 510KΩ~1MΩ 1MΩ~2.2MΩ 2.2MΩ~5.1MΩ	± 300PPM / °C ± 450PPM / °C ± 800PPM / °C ± 1000PPM / °C ± 1400PPM / °C

## ▶ How to Order

CF

❶

0.125W

❷

100R

❸

J

❹

TB

❺

❶ Part Number: CF, CFS

❷ Rated Power (W)

❸ Resistance Value ( $\Omega$ )

Code	Resistance Value
1R	1 $\Omega$
10R	10 $\Omega$
100R	100 $\Omega$
10K	10K $\Omega$
10M	10M $\Omega$
22M	22M $\Omega$

❹ Resistance Tolerance (%)

Code	Resistance Tolerance
G	$\pm 2\%$
J	$\pm 5\%$

❺ Package

Code	Package
TB	Taping Box

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