

# Carbon Film Fixed Resistors:

## Feature

- High quality performance
- Great economy
- Flame retardant type available
- Automatically insertable



## Specifications

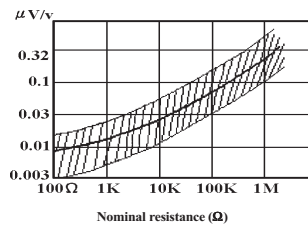
Part No.	Type	Power Rating At 70°C	Dimension (mm)				Max. Working Voltage	Max. Overload Voltage	Dielectric Withstanding Voltage	Resistance Range
			D Max.	L Max.	d $\begin{matrix} +0.02 \\ -0.05 \end{matrix}$	H $\pm 3$				
<b>Normal Size</b>										
CFR0W8	CFR-12	1/8W	1.85	3.5	0.5	28	200V	400V	400V	1Ω ~ 1MΩ
CFR0W4	CFR-25	1/4W	2.5	6.8	0.6	28	250V	500V	500V	1Ω ~ 10MΩ
CFR0W2	CFR-50	1/2W	3.5	10	0.6	28	350V	700V	700V	1Ω ~ 10MΩ
CFR01W	CFR-100	1W	5.5	16	0.8	28	500V	1000V	1000V	1Ω ~ 10MΩ
CFR02W	CFR-200	2W	6.5	17.5	0.8	28	500V	1000V	1000V	1Ω ~ 10MΩ
<b>Small Size &amp; Extra Small Size</b>										
CFR0S4	CFR-25-S	1/4W	1.85	3.5	0.5	28	200V	400V	400V	1Ω ~ 1MΩ
CFR0U2	CFR-50-SS	1/2W	2.5	6.8	0.6	28	250V	500V	250V	1Ω ~ 10MΩ
CFR0S2	CFR-50-S	1/2W	3	9	0.6	28	350V	700V	700V	1Ω ~ 10MΩ
CFR01S	CFR-100-S	1W	5	12	0.7	28	500V	1000V	1000V	1Ω ~ 10MΩ
CFR02S	CFR-200-S	2W	5.5	16	0.8	28	500V	1000V	1000V	1Ω ~ 10MΩ
CFR03S	CFR-300-S	3W	6.5	17.5	0.8	28	500V	1000V	1000V	1Ω ~ 10MΩ

- Standard E-24 series values in  $\pm 5\%$  tolerance
- Standard Beige base color; Special Lavender base color for CFR01S, CFR02S & CFR03S
- Standard Grayish-green base color (Non-Flammable coating) for CFR0U2 (CFR-50-SS)
- For any special inquiry which including too low or high ohmic values is available on a case to case basis

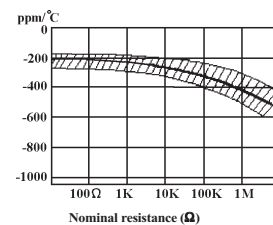
## Derating Curve



## Current Noise Level



## Temperature Coefficient



## Carbon Film Fixed Resistors:

### Performance Specifications

<b>Temperature coefficient</b>	±300PPM/°C for ≤10Ω; ±450PPM/°C for 11Ω ~ 99KΩ; 0 ~ -700PPM/°C for 100KΩ ~1MΩ; 0 ~ -1500PPM/°C for 1.1MΩ ~10MΩ.
<b>Short-time overload</b>	ΔR/R ≤ ±(1%+0.05Ω), with no evidence of mechanical damage.
<b>Insulation resistance</b>	Min. 10,000Mega Ohm.
<b>Dielectric withstanding voltage</b>	No evidence of flashover, mechanical damage, arcing or insulation breakdown.
<b>Terminal strength</b>	No evidence of mechanical damage.
<b>Resistance to Soldering heat</b>	ΔR/R ≤ ±(1%+0.05Ω), with no evidence of mechanical damage.
<b>Solderability</b>	Min. 95% coverage.
<b>Resistance to solvent</b>	No deterioration of protective coating and markings.
<b>Temperature cycling</b>	ΔR/R ≤ ±(1%+0.05Ω), with no evidence of mechanical damage.
<b>Load life in humidity</b>	Normal type: ΔR/R ± 3% for <100KΩ, ±5% for ≥100KΩ; Flame retardant type: ΔR/R ± 5% for <100KΩ, ±10% for ≥100KΩ
<b>Load life</b>	Normal type: ΔR/R ±2% for <56KΩ, ±3% for ≥56KΩ; Flame retardant type: ΔR/R ±5% for <100KΩ, ±10% for ≥100KΩ

### Ordering Procedure (Example: CFR 1/4W Small Size Non – Flame 5% 10KΩ T/B-5000)

#### Special Features:

0 = Standard product, F = Flame Retardant, I = Non - Inductive

**Wattage:** Normal size: W8 = 1/8W, W4 = 1/4W, W2 = 1/2W, 1W = 1W, 2W = 2W  
Small size: S4 = 1/4W-S, S2 = 1/2W-S, 1S = 1W-S, 2S = 2W-S, 3S = 3W-S  
Extra small size: U2 = 1/2W-SS

**Tolerance:** G = ± 2% , J = ± 5% , K = ± 10%

**Packing Type:** A = Tape/Box, T = Tape/Reel, B = Bulk/Box,  
P = Tape/Box of PT-26 product

#### Resistance Value:

E-24 series:

The 1<sup>st</sup> digit will be "0";  
the 2<sup>nd</sup> & 3<sup>rd</sup> digits are  
for the significant figures  
of the resistance and the  
4<sup>th</sup> digit indicate the  
numbers of zeros  
following

#### Packing Quantity:

1 = 1,000pcs, 2 = 2,000pcs, 3 = 3,000pcs, 4 = 4,000pcs  
5 = 5,000pcs, A = 500pcs, B = 2,500pcs,  
0 = for Bulk/Box packing

**Additional Information:** 0 = NIL

**Product Type:**  
CFR = Carbon Film  
Fixed Resistors

**C F R F S 4 J 0 1 0 3 A 5 0**