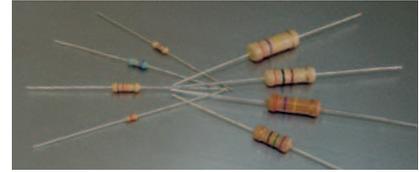


## Feature

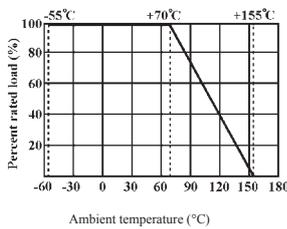
- High quality performance
- Great economy
- Flame retardant type available
- Automatically insertable



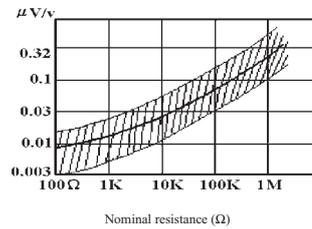
Part No.	Type	Power Rating At 70°C	Dimension (mm)				Max. Working Voltage	Max Overload Voltage	Dielectric Withstanding Voltage	Resistance Range
			D Max.	L Max.	d <sup>+0.02</sup> <sub>-0.05</sub>	H ± 3				
<b>Normal Size</b>										
CFR0W8	CFR-12	1/8W	1.85	3.5	0.5	28	200V	400V	400V	1Ω ~ 1MΩ
CFR0W4	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
CFROU2	CFR-50-SS	1/2W	3	6.8	0.6	28	250V	500V	500V	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 ± 5% tolerance
- Standard Beige base color; Light Brown base color for CFR01S, CFR02S & CFR03S
- Standard Grayish-green base color (Non-Flammable coating) for CFROU2 (CFR-50-SS)
- For any special inquiry which including too low or high ohmic values is available on a case to case basis

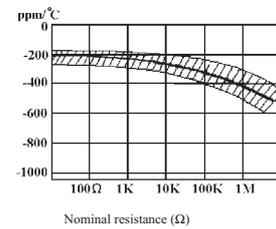
## Derating Curve



## Current Noise Level



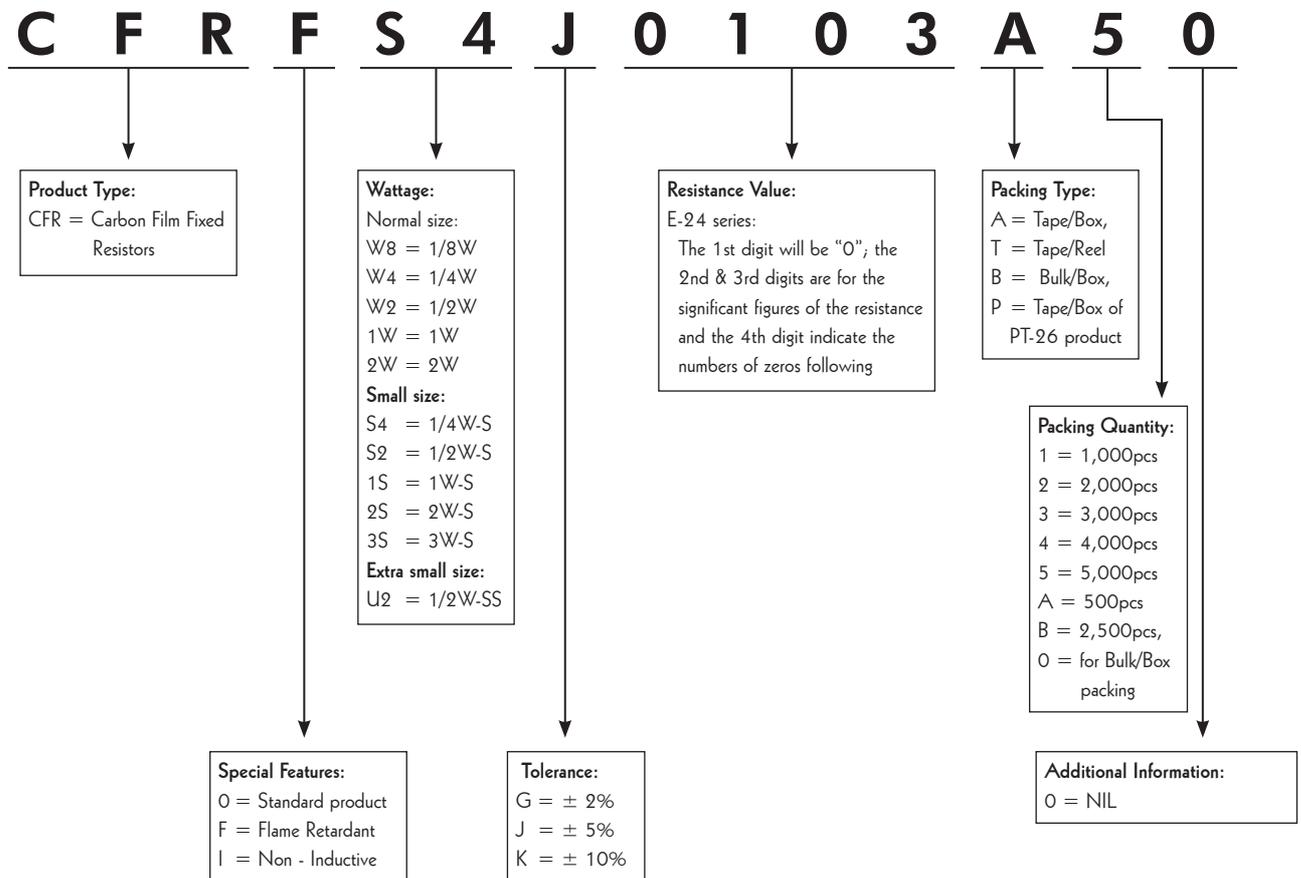
## Temperature Coefficient



## 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)



## Four Band Color Code (Available for CFR, MOR, KNP & 2% or 5% of MFR Products)



1 2 3 4

4 <sup>th</sup> Band	
Red	= ±2%
Gold	= ±5%
Silver	= ±10%

1 <sup>st</sup> Band	
Black	= 0
Brown	= 1
Red	= 2
Orange	= 3
Yellow	= 4
Green	= 5
Blue	= 6
Violet	= 7
Grey	= 8
White	= 9

2 <sup>nd</sup> Band	
Black	= 0
Brown	= 1
Red	= 2
Orange	= 3
Yellow	= 4
Green	= 5
Blue	= 6
Violet	= 7
Grey	= 8
White	= 9

3 <sup>rd</sup> Band	
Black	= Multiply by 1 ( $10^0$ )
Brown	= Multiply by 10 ( $10^1$ )
Red	= Multiply by 100 ( $10^2$ )
Orange	= Multiply by 1,000 ( $10^3$ )
Yellow	= Multiply by 10,000 ( $10^4$ )
Green	= Multiply by 100,000 ( $10^5$ )
Blue	= Multiply by 1,000,000 ( $10^6$ )
Violet	= Multiply by 10,000,000 ( $10^7$ )
Gold	= Multiply by 0.1 ( $10^{-1}$ )
Silver	= Multiply by 0.01 ( $10^{-2}$ )

## Five Band Color Code (Available for MFR 1% & FRN Products)



1 2 3 4 5

5 <sup>th</sup> Band	
Violet	= ±0.1%
Blue	= ±0.25%
Green	= ±0.5%
Brown	= ±1%

1 <sup>st</sup> Band	
Black	= 0
Brown	= 1
Red	= 2
Orange	= 3
Yellow	= 4
Green	= 5
Blue	= 6
Violet	= 7
Grey	= 8
White	= 9

2 <sup>nd</sup> Band	
Black	= 0
Brown	= 1
Red	= 2
Orange	= 3
Yellow	= 4
Green	= 5
Blue	= 6
Violet	= 7
Grey	= 8
White	= 9

3 <sup>rd</sup> Band	
Black	= 0
Brown	= 1
Red	= 2
Orange	= 3
Yellow	= 4
Green	= 5
Blue	= 6
Violet	= 7
Grey	= 8
White	= 9

4 <sup>th</sup> Band	
Black	= Multiply by 1 (100)
Brown	= Multiply by 10 (101)
Red	= Multiply by 100 (102)
Orange	= Multiply by 1,000 (103)
Yellow	= Multiply by 10,000 (104)
Green	= Multiply by 100,000 (105)
Blue	= Multiply by 1,000,000 (106)
Violet	= Multiply by 10,000,000 (107)
Gold	= Multiply by 0.1 (10 <sup>-1</sup> )
Silver	= Multiply by 0.01 (10 <sup>-2</sup> )