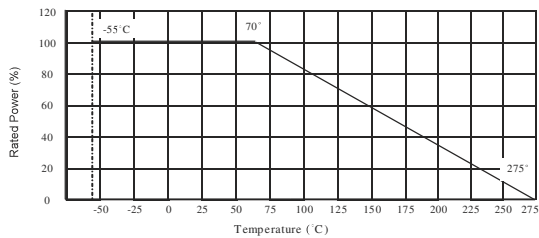
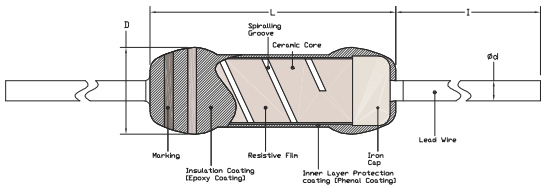




Dimensions and Construction



Features

- Highly reliable multi-layer electrode construction.
- Compatible with wave and reflow soldering process.
- Pb Free with Reflow soldering backward compatibility
- Resistors are coated with layers of beige color lacquer
- CF 1/2SS resistors are coated with layers of pink color lacquer

Type (Power Rating)	Dimensions			
	Inches (Millimeters)			
	L	D	l	d
CF 1/6 (1/6W)	0.134 ± 0.008 (3.40 ± 0.20)	0.075 ± 0.008 (1.90 ± 0.20)	1.102 ± 0.118 (28.00 ± 3.00)	0.018 ± 0.002 (0.45 ± 0.05)
CF1/4SS (1/4W)				
CF1/4 (1/4W)	0.248 ± 0.020 (6.30 ± 0.50)	0.091 ± 0.012 (2.30 ± 0.30)	1.102 ± 0.118 (28.00 ± 3.00)	0.024 ± 0.002 (0.60 ± 0.05)
CF1/2SS (1/2W)				
CF1/2 (1/2W)	0.354 ± 0.020 (9.00 ± 0.50)	0.130 ± 0.012 (3.30 ± 0.30)	1.102 ± 0.118 (28.00 ± 3.00)	0.031 ± 0.002 (0.78 ± 0.05)
CF1SS (1W)				
CF1 (1W / T52mm)	0.433 ± 0.040 (11.00 ± 1.00)	0.165 ± 0.020 (4.20 ± 0.50)	1.063 ± 0.118 (27.00 ± 3.00)	0.031 ± 0.002 (0.78 ± 0.05)
CF1 (1W / T73mm)			1.378 ± 0.118 (35.00 ± 3.00)	
CF2SS (2W / T52mm)			1.063 ± 0.118 (27.00 ± 3.00)	
CF2SS (2W / T73mm)			1.378 ± 0.118 (35.00 ± 3.00)	
CF2 (2W)	0.610 ± 0.040 (15.50 ± 1.00)	0.197 ± 0.020 (5.00 ± 0.50)	1.300 ± 0.118 (33.00 ± 3.00)	
CF3 (3W)	0.591 ± 0.040 (15.00 ± 1.00)	0.197 ± 0.020 (5.00 ± 0.50)		

Ordering Code / Information

CF	1/6	-	XXX	J	-	A	5
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Type	Power Rating	Nominal Resistance			Resistance Tolerance	Packaging	Quantity
General Purpose Carbon Film Resistor	1/6 1/4 1/4SS 1/2 1/2SS 1 1SS 2 2SS 3	Resistors	3-Digit	E24 Series 2,2Ω=2R2 100Ω=101	G = ±2% J = ±5%	A = Ammo (52mm) S = Spool (52mm) M = Ammo (26mm) N = Ammo (73mm) Q = Spool (73mm)	05 = 500 pcs 1 = 1,000pcs 2 = 2,000pcs 3 = 3,000pcs 5 = 5,000pcs

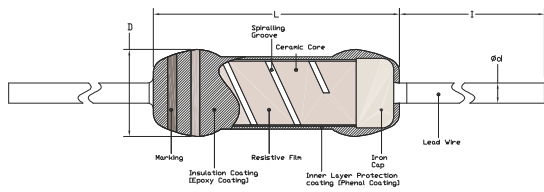
Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range E-24 G(±2%)	Resistance Range E-24 J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range
CF 1/6	1/6W	$<10\Omega$ (± 300 ppm) $10\Omega \leq X \leq 50K\Omega$ (0 to -350 ppm) $50K\Omega < X \leq 430K\Omega$ (0 to -500 ppm) $430K\Omega < X \leq 1M\Omega$ (0 to -800 ppm) $1M\Omega < X \leq 4.7M\Omega$ (0 to -1,600 ppm) $4.7M\Omega < X \leq 10M\Omega$ (0 to -2,000 ppm)	1Ω - 1MΩ	1Ω - 10MΩ	250V	400V	-55°C to +155°C
CF 1/4	1/4W					500V	
CF1/4SS					1/2W	350V	
CF1/2	1W					500V	
CF1/2SS			2W	10Ω - 1MΩ			
CF1	3W						
CF1SS							
CF2							
CF2SS							
CF3							

Test	Specification		Test Method
Resistance Value	Within Resistors specification		To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR		25°C/ +125°C
Short Time Overload	±(0.5% + 0.05Ω)	For 2% & 5% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
Resistance to Soldering Heat	±(0.5% + 0.05Ω)	For 2% & 5% tolerance	260°C ± 5°C, 10 seconds ± 1 second
Moisture Resistance	±(1.0% + 0.05Ω)	For 2% & 5% tolerance	40°C ± 2°C, 90% - 95% RH, 1000 hours
Load Life	< 100KΩ, ±2% Max.	For 2% & 5% tolerance	70 °C ± 2°C , 1000 hours, 1.5 hours On, 0.5 hours Off cycle
	≥ 100KΩ, ±3% Max.		



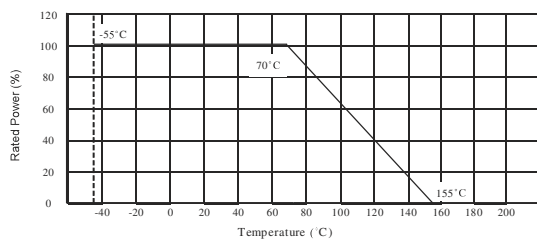
Dimensions and Construction



Features

- Flame-proof lacquer coating
- Marking: Light gray body color with color-coded bands
- Suitable for automatic machine insertion
- Resistors are coated with layers of gray color lacquer

Type (Power Rating)	Dimensions			
	Inches (Millimeters)			
	L	D	l	d
FP1/6 (1/6W)	0.126 ± 0.020 (3.20 ± 0.50)	0.075 ± 0.020 (1.90 ± 0.50)	1.102 ± 0.079 (28.00 ± 2.00)	0.018 ± 0.002 (0.45 ± 0.05)
FP1/4 (1/4W)	0.244 ± 0.020 (6.20 ± 0.50)	0.091 ± 0.020 (2.30 ± 0.50)	1.063 ± 0.079 (27.00 ± 2.00)	0.022 ± 0.002 (0.55 ± 0.05)
FP1/2 (1/2W)	0.358 ± 0.020 (9.10 ± 0.50)	0.126 ± 0.020 (3.20 ± 0.50)	1.063 ± 0.079 (27.00 ± 2.00)	0.022 ± 0.002 (0.55 ± 0.05)
FP1 (1W)	0.441 ± 0.020 (11.20 ± 0.50)	0.165 ± 0.020 (4.20 ± 0.50)	1.024 ± 0.079 (26.00 ± 2.00)	0.031 ± 0.002 (0.78 ± 0.05)
FP2 (2W)	0.598 ± 0.020 (15.20 ± 0.50)	0.197 ± 0.020 (5.00 ± 0.50)	1.339 ± 0.079 (34.00 ± 2.00)	0.031 ± 0.002 (0.78 ± 0.05)



Ordering Code / Information

FP	1/6	-	XXX	J	-	A	5
Type	Power Rating	Nominal Resistance		Resistance Tolerance	Packaging		Quantity
Flame-Proof Carbon Film Resistors	1/6 1/4 1/2 1 2	Resistors	3-Digit E24 Series 2,2Ω=2R2 100Ω=101	G = ±2% J = ±5%	A = Ammo (52mm) S = Spool (52mm) M = Ammo (26mm) R = Spool (26mm) N = Ammo (73mm)		1 = 1,000pcs 2 = 2,000pcs 3 = 3,000pcs 5 = 5,000pcs

Application and Ratings

Product Type	Power Rating @ 70°C	T.C.R (ppm/°C) Max	Resistance Range E-24 G(±2%)	Resistance Range E-24 J(±5%)	Max Working Voltage	Max Overload Voltage	Operating Temperature Range
FP1/6	1/6W	<math><10\Omega (\pm 300 \text{ ppm})</math> <math>10\omega (0="" -350="" 50k\omega="" \leq="" \text{="" math="" ppm})<="" to="" x="" }=""> <math>50k\omega <="" (0="" -500="" 430k\omega="" \leq="" \text{="" math="" ppm})<="" to="" x="" }=""> <math>430k\omega <="" (0="" -800="" 1m\omega="" \leq="" \text{="" math="" ppm})<="" to="" x="" }=""> <math>1m\omega <="" (0="" -1,600="" 4.7m\omega="" \leq="" \text{="" math="" ppm})<="" to="" x="" }=""> <math>4.7m\omega <="" (0="" -2,000="" 10m\omega="" \leq="" \text{="" math="" ppm})<="" to="" x="" }=""> </math>4.7m\omega></math>1m\omega></math>430k\omega></math>50k\omega></math>10\omega>	10Ω - 1MΩ	1Ω - 10MΩ	200V	400V	-55°C to +155°C
FP1/4	1/4W				250V	500V	
FP1/2	1/2W				350V	700V	
FP1	1W				500V	1,000V	
FP2	2W						

Test	Specification		Test Method
Resistance Value	Within Resistors specification		To be measure at 25°C
Resistance Temperature Coefficient	Within Specification of TCR		25°C/ +125°C
Short Time Overload	±(1.0% + 0.05Ω)	For 2% & 5% tolerance	Apply 2.5 times of rated voltage or maximum overload voltage for 5 secs which is lower
Resistance to Soldering Heat	±(1.0% + 0.05Ω)	For 2% & 5% tolerance	260°C ± 5°C, 10 seconds ± 1 second
Moisture Resistance	±(1.0% + 0.05Ω)	For 2% & 5% tolerance	40°C ± 2°C, 90% - 95% RH, 1000 hours
Load Life	±(2.0% + 0.1Ω)	For 2% & 5% tolerance	70°C ± 2°C , 1000 hours, 1.5 hours On, 0.5 hours Off cycle
High Temperature Exposure	±(1.0% + 0.05Ω)	For 2% & 5% tolerance	125°C , 1000 hours. Unpowered. Measurement at 24 ± 2 hours after test conclusion