

COMPLIANT

HALOGEN FREE



# Metal Film Resistors, Industrial Power, Flameproof



## **FEATURES**

- Small size suitable for 1/2 W, 1 W and 2 W applications
- High power rating, small size
- Flameproof, high temperature coating meets EIA RS-325-A
- Excellent high frequency characteristics
- Low noise
- Low voltage coefficient
- Tape and reel packaging for automatic insertion (52.4 mm inside tape spacing per EIA-296-E)

 Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

Note

Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING P <sub>70°C</sub> W	MAXIMUM WORKING VOLTAGE <sup>(1)</sup> V	TEMPERATURE COEFFICIENT ± ppm/°C	TOLERANCE ± %	RESISTANCE RANGE Ω	E-SERIES	
CCF02	CCF-2	2.0	350	100	1, 5	4.99 to 1M	96 for 1 % tolerance 24 for 5 % tolerance	

## Note

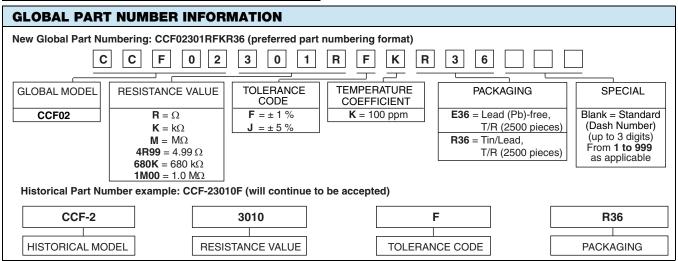
(1) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less.

TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	CCF02				
Rated Dissipation at 70 °C	W	2.0				
Maximum Working Voltage	V	≤ 350				
Insulation Voltage (1 Min)	V <sub>eff</sub>	> 500				
Dielectric Strength	V <sub>AC</sub>	900				
Insulation Resistance	Ω	≥ 10 <sup>11</sup>				
Operating Temperature Range	°C	- 65/+ 230				
Terminal Strength (Pull Test)	lb	2				
Failure Rate	10 <sup>-9</sup> /h	< 1				
Weight (Max.)	g	0.35				

MATERIAL SPECIFICATIONS					
Element	Proprietary nickel-chrome film				
Solderability	Satisfactory per MIL-STD-202, Method 208.				
Core	Fire-cleaned high purity ceramic				
Termination	Standard lead material is solder-coated copper. Solderable and weldable per MIL-STD-1276, Type C.				

## **MARKING**

Color code marking with 5 color bands for  $\pm$  1 % product and 4 color bands for  $\pm$  5 % product

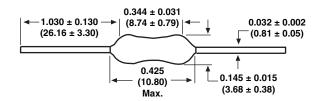


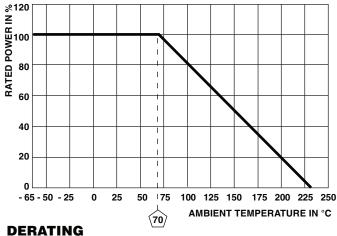
### Note

• For additional information on packaging, refer to the Through-Hole Resistor Packaging document (www.vishav.com/doc?31544).



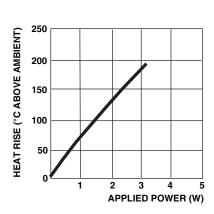
## **DIMENSIONS** in inches (millimeters)





Surface temperatures were taken with an infrared pyrometer in + 25 °C still air.

Resistors were supported by their leads in test clips at a point 0.5" (12.70 mm) out from the resistor body ends.



## THERMAL RESISTANCE

PERFORMANCE			
TEST	MAX. ΔR (TYPICAL TEST LOTS)		
Thermal Shock	± 1.0 %		
Short Time Overload	± 0.5 %		
Low Temperature Operation	± 0.5 %		
Moisture Resistance	± 1.5 %		
Resistance to Soldering Heat	± 0.5 %		
Shock	± 0.5 %		
Vibration	± 0.5 %		
Terminal Strength	± 0.5 %		
Dielectric Withstanding Voltage	± 0.5 %		
Life	± 2.0 %		



## **Legal Disclaimer Notice**

Vishay

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# **Material Category Policy**

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

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