

## 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 [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS\***  
COMPLIANT  
HALOGEN  
FREE

### Note

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

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\text{ °C}}$ W	MAXIMUM WORKING VOLTAGE <sup>(1)</sup> V	TEMPERATURE COEFFICIENT $\pm \text{ppm/}^{\circ}\text{C}$	TOLERANCE $\pm \%$	RESISTANCE RANGE $\Omega$	E-SERIES
CCF02	CCF-2	2.0	350	100	1, 5	4.99 to 1M	96 for 1 % tolerance 24 for 5 % tolerance

### Note

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

TECHNICAL SPECIFICATIONS			MATERIAL SPECIFICATIONS		
PARAMETER	UNIT	CCF02	Element	Proprietary nickel-chrome film	
Rated Dissipation at 70 °C	W	2.0	Solderability	Satisfactory per MIL-STD-202, Method 208.	
Maximum Working Voltage	V	$\leq 350$	Core	Fire-cleaned high purity ceramic	
Insulation Voltage (1 Min)	$V_{\text{eff}}$	$> 500$	Termination	Standard lead material is solder-coated copper. Solderable and weldable per MIL-STD-1276, Type C.	
Dielectric Strength	$V_{\text{AC}}$	900			
Insulation Resistance	$\Omega$	$\geq 10^{11}$			
Operating Temperature Range	°C	- 65/+ 230			
Terminal Strength (Pull Test)	lb	2			
Failure Rate	$10^{-9}/\text{h}$	$< 1$			
Weight (Max.)	g	0.35			

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CCF02301RFKR36 (preferred part numbering format)

C	C	F	0	2	3	0	1	R	F	K	R	3	6			
GLOBAL MODEL		RESISTANCE VALUE			TOLERANCE CODE		TEMPERATURE COEFFICIENT			PACKAGING			SPECIAL			
CCF02		$R = \Omega$ $K = \text{k}\Omega$ $M = \text{M}\Omega$ $4R99 = 4.99 \Omega$ $680K = 680 \text{k}\Omega$ $1M00 = 1.0 \text{M}\Omega$			$F = \pm 1\%$ $J = \pm 5\%$		$K = 100 \text{ ppm}$			E36 = Lead (Pb)-free, T/R (2500 pieces)			Blank = Standard (Dash Number) up to 3 digits From 1 to 999 as applicable			

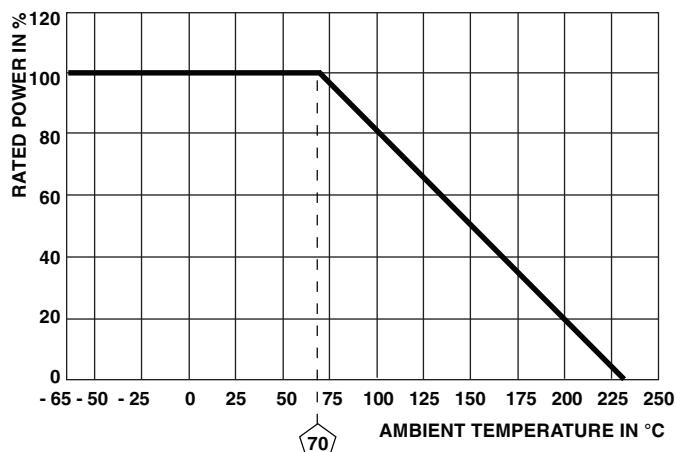
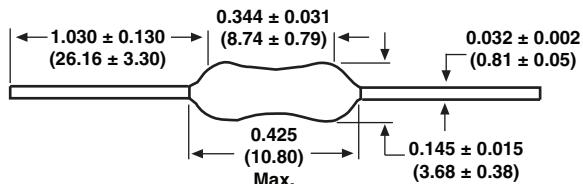
Historical Part Number example: CCF-23010F (will continue to be accepted)

CCF-2	3010	F	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

### Note

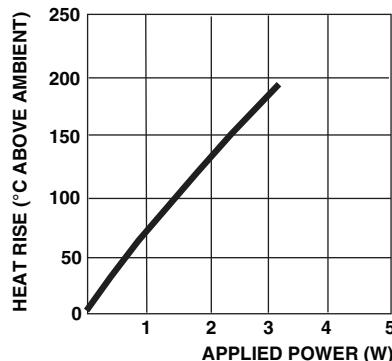
- For additional information on packaging, refer to the Through-Hole Resistor Packaging document ([www.vishay.com/doc?231544](http://www.vishay.com/doc?231544)).

**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.



## DERATING

## **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 %

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# Mouser Electronics

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