

## Metal Film Resistors, Industrial Power, Flameproof



### FEATURES

- Small size suitable for 1/2, 1 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)
- Lead (Pb)-free version is RoHS compliant



**RoHS\***  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70^{\circ}\text{C}}$ W	LIMITING ELEMENT VOLTAGE MAX. $V_{\infty}$	TEMPERATURE COEFFICIENT ppm/ $^{\circ}\text{C}$	TOLERANCE %	RESISTANCE RANGE $\Omega$	E-SERIES
CCF02	CCF-2	2.0	350	100	$\pm 1, \pm 5$	4R99 - 1M	96 for 1 % tolerance 24 for 5 % tolerance

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CCF02
Rated Dissipation at 70 $^{\circ}\text{C}$	W	2.0
Maximum Working Voltage	$V_{\infty}$	$\leq 350$
Insulation Voltage (1 Min)	$V_{\text{eff}}$	$> 500$
Dielectric Strength	$V_{\text{AC}}$	900
Insulation Resistance	$\Omega$	$\geq 10^{11}$
Operating Temperature Range	$^{\circ}\text{C}$	- 65/+ 230
Terminal Strength (Pull Test)	lb	2
Failure Rate	$10^{-9}/\text{h}$	$< 1$
Weight (Max.)	g	0.35

### MATERIAL SPECIFICATIONS

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

### MARKING

- 5 band colorband for  $\pm 1 \%$
- 4 band colorband for  $\pm 5 \%$

### GLOBAL PART NUMBER INFORMATION

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

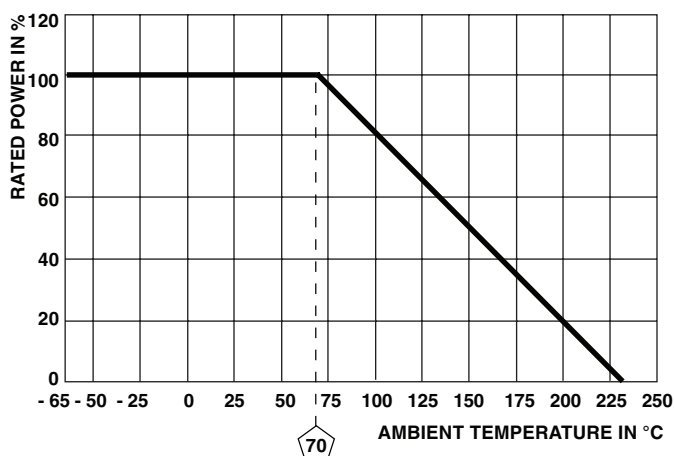
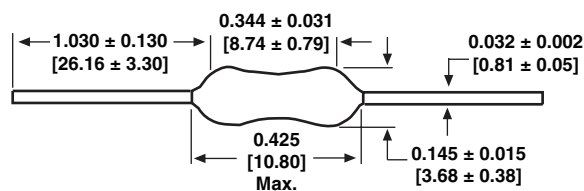
C	C	F	0	2	3	0	1	R	F	K	R	3	6			
GLOBAL MODEL		RESISTANCE VALUE			TOLERANCE CODE		TEMPERATURE COEFFICIENT		PACKAGING			SPECIAL				
CCF02		R = Decimal K = Thousand M = Million 4R99 = 4.99 Ω 680K = 680 kΩ 1M00 = 1.0 MΩ			F = ± 1 % J = ± 5 %		K = 100 ppm		E36 = Lead (Pb)-free, T/R (2500 pieces) R36 = Tin/Lead, T/R (2500 pieces)			Blank = Standard (Dash Number) (up to 3 digits) From 1 - 999 as applicable				

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

<b>CCF-2</b>	<b>3010</b>	<b>F</b>	<b>R36</b>
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

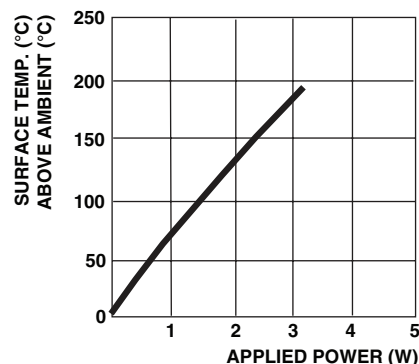
\* Pb containing terminations are not RoHS compliant, exemptions may apply

# 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

## SURFACE TEMPERATURE vs POWER

PERFORMANCE	
TEST	MAX. $\Delta R$ (Typical Test Lots)
Thermal Shock	$\pm 1.0$ %
Short Time Overload	$\pm 0.5$ %
Low Temperature Operation	$\pm 0.5$ %
Moisture Resistance	$\pm 1.5$ %
Resistance to Soldering Heat	$\pm 0.5$ %
Shock	$\pm 0.5$ %
Vibration	$\pm 0.5$ %
Terminal Strength	$\pm 0.5$ %
Dielectric Withstanding Voltage	$\pm 0.5$ %
Life	$\pm 2.0$ %



### Disclaimer

All product specifications and data are subject to change without notice.

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