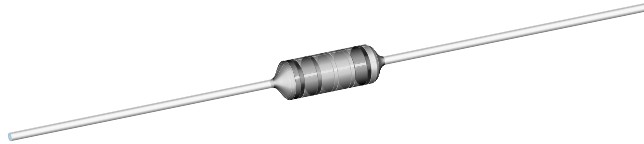


Metal Film Resistors, Industrial Power, Flameproof



FEATURES

- Small size suitable for 1/2, 1 & 2 watt 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 $P_{70\text{ }^\circ\text{C}}$ W	LIMITING ELEMENT VOLTAGE MAX. $V \cong$	TEMPERATURE COEFFICIENT ppm/°C	TOLERANCE %	RESISTANCE RANGE Ω	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 °C	W	2.0
Maximum Working Voltage	$V \cong$	≤ 350
Insulation Voltage (1 min)	V_{eff}	> 500
Dielectric Strength	VAC	900
Insulation Resistance	Ω	$\geq 10^{11}$
Operating Temperature Range	°C	- 65 / + 230
Terminal Strength (pull test)	lb	2
Failure Rate	$10^{-9}/\text{h}$	< 1
Weight (max)	g	0.35

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	
-	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 k Ω 1M00 = 1.0 M Ω				F = $\pm 1\%$ J = $\pm 5\%$		K = 100 ppm		E36 = Lead Free, T/R (2500 pcs) R36 = Tin/Lead, T/R (2500 pcs)			Blank = Standard (Dash Number) (up to 3 digits) From 1-999 as applicable			

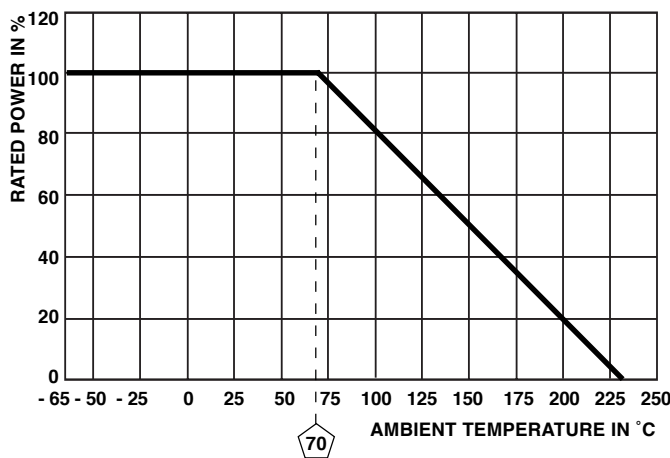
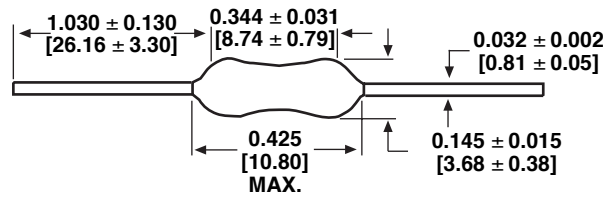
Historical Part Number example: CCF-23010F (will continue to be accepted)

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

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

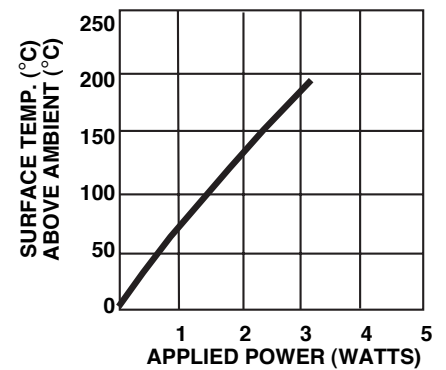


DIMENSIONS in inches [millimeters]



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. 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 %



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.