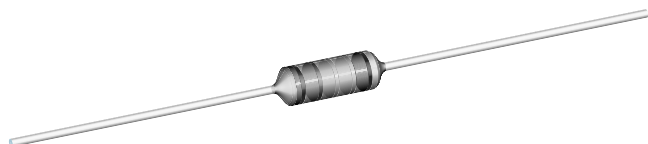


Metal Film Resistors, Industrial Power, Flameproof



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/ $^{\circ}\text{C}$	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 $^{\circ}\text{C}$	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	$^{\circ}\text{C}$	- 65 / + 230
Terminal Strength (pull test)	lb	2
Failure Rate	$10^{-9}/\text{h}$	< 1
Weight (max)	g	0.35

MATERIAL SPECIFICATIONS

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 kΩ 1M00 = 1.0 MΩ				F = ± 1 % J = ± 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			

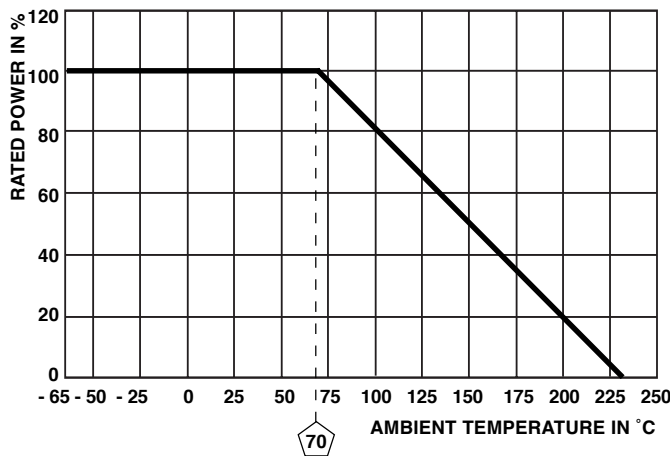
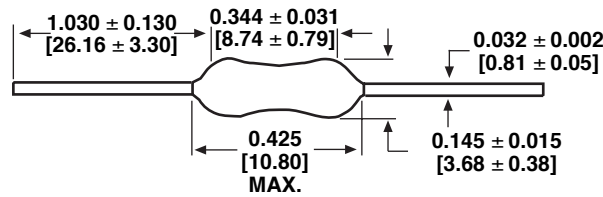
Historical Part Number example: CCF-23010F (will continue to be accepted)

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

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

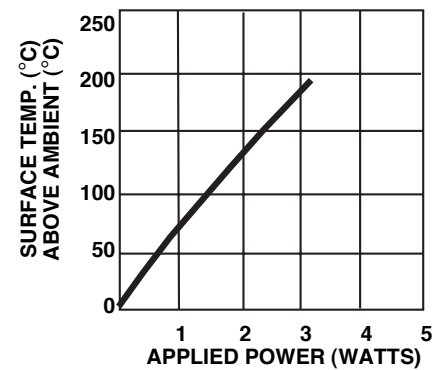


DIMENSIONS in inches [millimeters]



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 %



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Vishay:

<u>CCF027K87FKR36</u>	<u>CCF021K50JKR36</u>	<u>CCF026K20JKR36</u>	<u>CCF022K40JKR36</u>	<u>CCF028K45FKR36</u>
<u>CCF0256K2FKR36</u>	<u>CCF02110RJKR36</u>	<u>CCF0218K2FKR36</u>	<u>CCF024K80FKR36</u>	<u>CCF02180KJKR36</u>
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<u>CCF022K40FKR36</u>	<u>CCF024R99FKR36</u>	<u>CCF022K10FKR36</u>	<u>CCF022K37FKR36</u>	<u>CCF0236K0JKR36</u>
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<u>CCF025R00FKE36</u>				
<u>CCF02665KFKR36</u>	<u>CCF02510RJKR36</u>	<u>CCF0215K0JKR36</u>	<u>CCF0212K0JKR36</u>	<u>CCF0210K0JKR36</u>
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<u>CCF0210R0FKR36</u>	<u>CCF0230R0FKR36</u>	<u>CCF0213R0FKR36</u>	<u>CCF02120RJKR36</u>	<u>CCF0225R0FKR36</u>
<u>CCF0220R0FKR36</u>	<u>CCF027K50JKR36</u>	<u>CCF0230K0JKR36</u>	<u>CCF0247R5FKR36</u>	