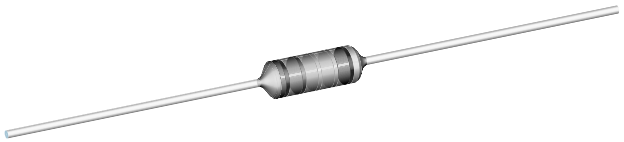
Metal Film Resistors, Industrial Power, Flameproof



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

Pb-free Available

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 $P_{70\,°C}$ W	MAXIMUM WORKING VOLTAGE (1) 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_{eff}	> 500
Dielectric Strength	V_{AC}	900
Insulation Resistance	Ω	≥ 10^{11}
Operating Temperature Range	°C	- 65/+ 230
Terminal Strength (Pull Test)	lb	2
Failure Rate	10^{-9}/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 ± 1 % product and 4 color bands for ± 5 % product

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** = Ω **K** = kΩ **M** = MΩ **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 to 999** as applicable

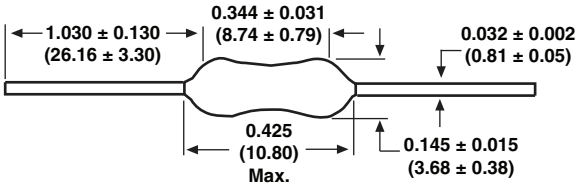
Historical Part Number example: CCF-23010F (will continue to be accepted)

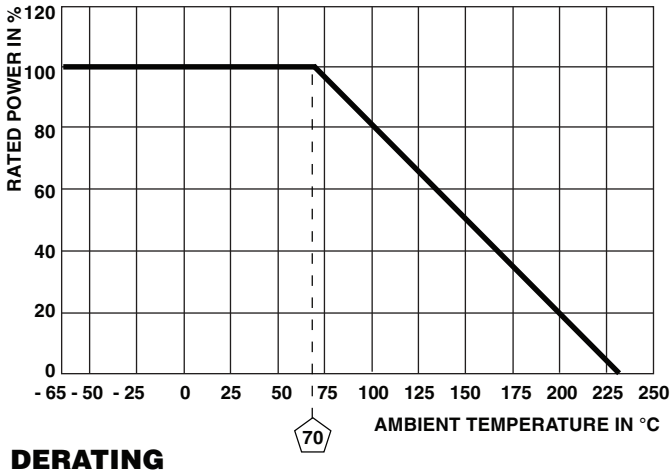
CCF-2	3010	F	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

Note

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

DIMENSIONS in inches (millimeters)

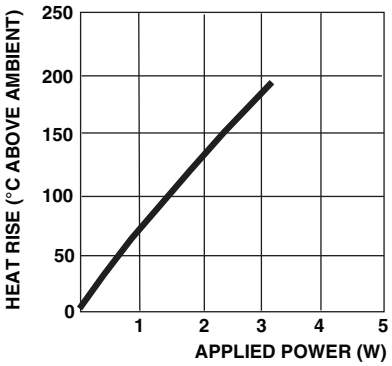




DERATING

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. Δ*R* (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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