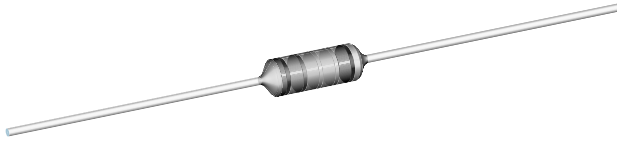


Metal Film Resistors, Industrial Power, Flameproof



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



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 $P_{70^\circ\text{C}}$ W | MAXIMUM WORKING VOLTAGE ⁽¹⁾ V | TEMPERATURE COEFFICIENT \pm ppm/ $^\circ\text{C}$ | TOLERANCE \pm % | 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 $^\circ\text{C}$ | W | 2.0 |
| Maximum Working Voltage | V | \leq 350 |
| Insulation Voltage (1 Min) | V_{eff} | $>$ 500 |
| Dielectric Strength | V_{AC} | 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

Color code marking with 5 color bands for \pm 1 % product and 4 color bands for \pm 5 % product

GLOBAL PART NUMBER INFORMATION

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

| GLOBAL MODEL | RESISTANCE VALUE | TOLERANCE CODE | TEMPERATURE COEFFICIENT | PACKAGING | SPECIAL |
|--------------|--|--------------------------------|-------------------------|--|---|
| CCF02 | R = Ω K = k Ω M = M Ω 4R99 = 4.99 Ω 680K = 680 k Ω 1M00 = 1.0 M Ω | F = \pm 1 % J = \pm 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)

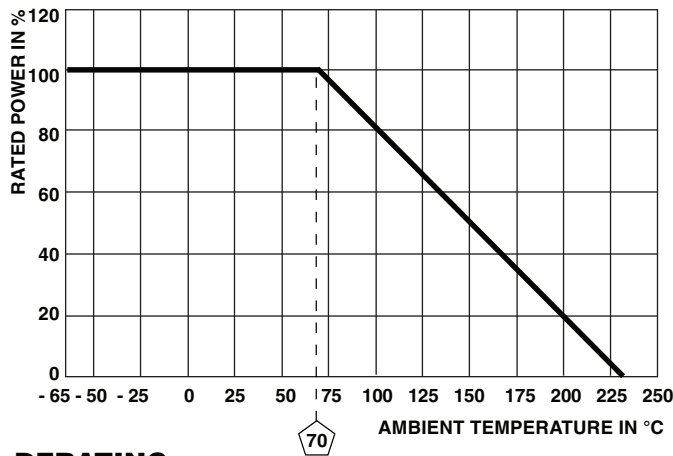
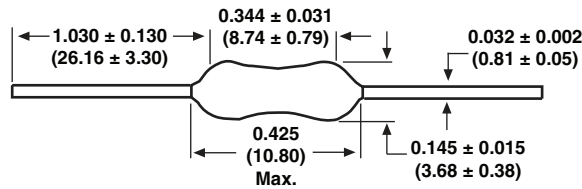
| | | | |
|------------------|------------------|----------------|-----------|
| CCF-2 | 3010 | F | R36 |
| HISTORICAL MODEL | RESISTANCE VALUE | TOLERANCE CODE | PACKAGING |

Note

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



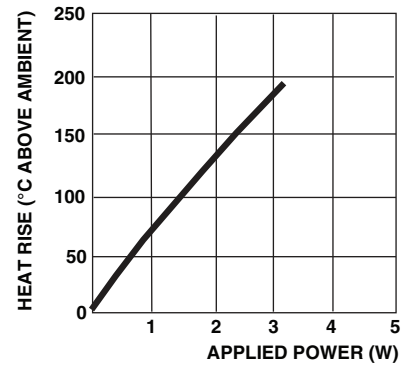
DIMENSIONS in inches (millimeters)



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. 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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