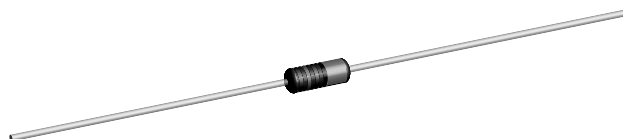


# Metal Film Resistors, Industrial, $\pm 2\%$ and $\pm 5\%$ Tolerance



## FEATURES

- Dual power rating:  
 $P_{70} = 0.25\text{ W}$  with 1.5 % stability  
 $P_{70} = 0.50\text{ W}$  with 2.0 % stability
- $\pm 2\%$  and  $\pm 5\%$  tolerance
- Temperature coefficient:  $\pm 100\text{ ppm/K}$  and  $\pm 200\text{ ppm/K}$
- Tape and reel packaging for automatic insertion (52.4 mm inside tape spacing per EIA-296-E)
- Flame retardant epoxy conformal coating (red brown color)
- Standard 4 band color code marking for ease of identification after mounting
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Compliant to RoHS directive 2002/95/EC



**RoHS**  
COMPLIANT

## STANDARD ELECTRICAL SPECIFICATIONS

| PRODUCT | RATED DISSIPATION<br>$P_{70}$<br>W | LIMITING ELEMENT<br>VOLTAGE MAX.<br>$V_{\equiv}$ | TEMPERATURE<br>COEFFICIENT<br>ppm/K | TOLERANCE<br>% | RESISTANCE<br>RANGE<br>$\Omega$ | E-SERIES |
|---------|------------------------------------|--------------------------------------------------|-------------------------------------|----------------|---------------------------------|----------|
| CCF07   | 0.25/0.5                           | 250                                              | $\pm 100$                           | $\pm 2, \pm 5$ | 10 $\Omega$ to 1 M $\Omega$     | E24      |
| CCF07   | 0.25/0.5                           | 250                                              | $\pm 200$                           | $\pm 5$        | 1.1 M $\Omega$ to 2 M $\Omega$  | E24      |

## TECHNICAL SPECIFICATIONS

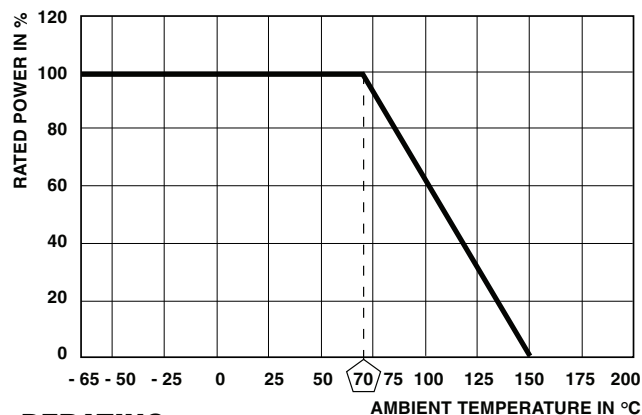
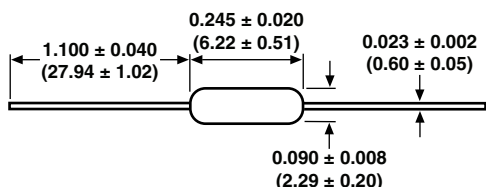
| PARAMETER                          | UNIT               | CCF07          |
|------------------------------------|--------------------|----------------|
| Rated Dissipation, $P_{70}$        | W                  | 0.25/0.5       |
| Maximum Working Voltage, $U_{max}$ | V $\equiv$         | $\leq 250$     |
| Insulation Voltage (1 Min)         | V $_{eff}$         | 500            |
| Dielectric Strength                | V $_{AC}$          | 450            |
| Insulation Resistance              | $\Omega$           | $\geq 10^{11}$ |
| Operating Temperature Range        | $^{\circ}\text{C}$ | - 65 to + 150  |
| Terminal Strength (Pull Test)      | lb                 | 2              |
| Weight                             | g                  | 0.35 max.      |

## PART NUMBER AND PRODUCT DESCRIPTION

Part Number: CCF07240RGKE36

|         |                                                                                             |   |                        |   |                                |   |                                           |   |   |   |                                                                                         |   |   |  |  |  |
|---------|---------------------------------------------------------------------------------------------|---|------------------------|---|--------------------------------|---|-------------------------------------------|---|---|---|-----------------------------------------------------------------------------------------|---|---|--|--|--|
| C       | C                                                                                           | F | 0                      | 7 | 2                              | 4 | 0                                         | R | G | K | E                                                                                       | 3 | 6 |  |  |  |
| PRODUCT | RESISTANCE VALUE                                                                            |   | TOLERNACE CODE         |   | TEMPERATURE COEFFICIENT        |   | PACKAGING                                 |   |   |   | SPECIAL                                                                                 |   |   |  |  |  |
| CCF07   | R = Decimal<br>K = Thousand<br>M = Million<br>10R0 = 10 Ω<br>680K = 680 kΩ<br>2M00 = 2.0 MΩ |   | G = ± 2 %<br>J = ± 5 % |   | K = 100 ppm/K<br>N = 200 ppm/K |   | E36 = Lead (Pb)-free<br>T/R (5000 pieces) |   |   |   | Blank = Standard<br>(dash number)<br>(up to 3 digits)<br>From 1 to 999<br>as applicable |   |   |  |  |  |

**DIMENSIONS** in inches (millimeters)



**DERATING**

**MARKING**

The nominal resistance and tolerance are marked on the resistor using four colored bands in accordance with IEC 60062, marking codes for resistors and capacitors.

**RESISTANCE VALUES**

Vishay CCF07 is available in the standard 24 resistance values per decade. Values are obtained from the following decade table by multiplying by powers of 10. As an example: 24 can represent 24  $\Omega$ , 240  $\Omega$ , 2.4 k $\Omega$ , 24 k $\Omega$  or 240 k $\Omega$ .

|    |    |    |    |
|----|----|----|----|
| 10 | 18 | 33 | 56 |
| 11 | 20 | 36 | 62 |
| 12 | 22 | 39 | 68 |
| 13 | 24 | 43 | 75 |
| 15 | 27 | 47 | 82 |
| 16 | 30 | 51 | 91 |

**TECHNICAL SPECIFICATIONS**

| TEST <sup>(1)</sup>             | 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/Bump                      | $\pm 0.5\%$                         |
| Vibration                       | $\pm 0.5\%$                         |
| Terminal Strength               | $\pm 0.5\%$                         |
| Dielectric Withstanding Voltage | $\pm 0.5\%$                         |
| Life                            | $\pm 1.5\%$ <sup>(2)</sup>          |

**Notes**

<sup>(1)</sup> Test specifications as per IEC 60115-1

<sup>(2)</sup> Life  $\Delta R$  is  $\pm 2.0\%$  for 1/2 W rating



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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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