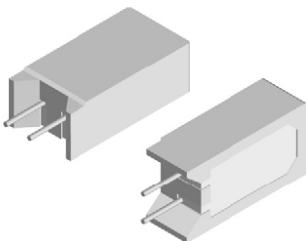




Wirewound/Metal Oxide Resistors, Commercial Power, Vertical Mount



FEATURES

- Space saving
- Direct mounting on printed circuit board
- High power to size ratio
- Special cement potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912

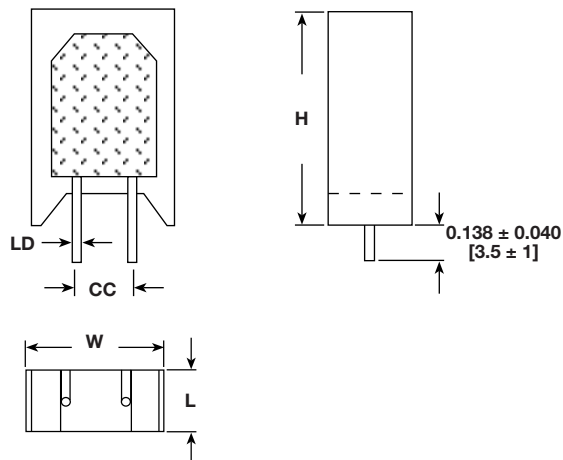


RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | |
|------------------------------------|---|------------------------------|-------------|----------------------|--------------------------|
| GLOBAL MODEL | POWER RATING $P_{40^{\circ}\text{C}}$ W | RESISTANCE RANGE Ω | | TOLERANCE \pm % | WEIGHT (typical) g |
| | | WIREWOUND | METAL OXIDE | | |
| CPCC02 | 2 | 0.1 to 100 | n/a | 5, 10 | 4.7 |
| CPCF02 | 2 | n/a | 101 to 50K | 5, 10 | 4.7 |
| CPCC03 | 3 | 0.1 to 100 | n/a | 5, 10 | 5.5 |
| CPCF03 | 3 | n/a | 101 to 50K | 5, 10 | 5.5 |
| CPCC05 | 5 | 0.1 to 100 | n/a | 5, 10 | 6.9 |
| CPCF05 | 5 | n/a | 101 to 50K | 5, 10 | 6.9 |
| CPCC07 | 7 | 0.1 to 100 | n/a | 5, 10 | 9.2 |
| CPCF07 | 7 | n/a | 101 to 50K | 5, 10 | 9.2 |
| CPCC10 | 10 | 0.1 to 100 | n/a | 5, 10 | 14.3 |
| CPCC1A | 10 | 0.1 to 100 | n/a | 5, 10 | 13.2 |

| TECHNICAL SPECIFICATIONS | | |
|---------------------------------|-------------------------|--|
| PARAMETER | UNIT | CPCC, CPCF HIGH VOLUME RESISTOR CHARACTERISTICS |
| Temperature Coefficient | ppm/ $^{\circ}\text{C}$ | \pm 400 |
| Short Time Overload | - | 5 x rated power for 5 s |
| Maximum Working Voltage | V | $(P \times R)^{1/2}$ |
| Operating Temperature Range | $^{\circ}\text{C}$ | -65 to +275 for wirewound, -65 to +225 for metal oxide |
| Terminal Strength | lb | 10 minimum |
| Dielectric Withstanding Voltage | V_{AC} | 1000 |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|-------------------------------------|---|---|--------------------------------|---|---|---|---|---|---|--|--|--|
| Global Part Numbering Example: CPCC0515R00JE66 | | | | | | | | | | | | | | | | | |
| C | P | C | C | 0 | 5 | 1 | 5 | R | 0 | 0 | J | E | 6 | 6 | | | |
| GLOBAL MODEL | | VALUE | | | TOLERANCE | | | PACKAGING | | | SPECIAL | | | | | | |
| (See Standard Electrical Specifications Global Model column for options) | | R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω | | | J = \pm 5.0 % K = \pm 10.0 % | | | E66 = lead (Pb)-free bulk pack | | | (Dash number) (Up to 3 digits) From 1 to 999 as applicable | | | | | | |

**DIMENSIONS** in inches [millimeters]

| GLOBAL MODEL | DIMENSIONS in inches [millimeters] | | | | |
|--------------|------------------------------------|-----------------------|-----------------------|-------------------------|--------------------------------------|
| | H ± 0.060 [1.5] | W ± 0.040 [1.0] | L ± 0.040 [1.0] | LD ± 0.002 [0.05] | CC + 0.08 / - 0.04 [+ 2 / - 1] |
| CPCC02 | 0.787 [20] | 0.433 [11] | 0.138 [3.5] | 0.031 [0.8] | 0.197 [5] |
| CPCF02 | 0.787 [20] | 0.433 [11] | 0.138 [3.5] | 0.031 [0.8] | 0.197 [5] |
| CPCC03 | 0.984 [25] | 0.472 [12] | 0.315 [8] | 0.031 [0.8] | 0.197 [5] |
| CPCF03 | 0.984 [25] | 0.472 [12] | 0.315 [8] | 0.031 [0.8] | 0.197 [5] |
| CPCC05 | 0.984 [25] | 0.512 [13] | 0.354 [9] | 0.031 [0.8] | 0.197 [5] |
| CPCF05 | 0.984 [25] | 0.512 [13] | 0.354 [9] | 0.031 [0.8] | 0.197 [5] |
| CPCC07 | 1.535 [39] | 0.512 [13] | 0.354 [9] | 0.031 [0.8] | 0.197 [5] |
| CPCF07 | 1.535 [39] | 0.512 [13] | 0.354 [9] | 0.031 [0.8] | 0.197 [5] |
| CPCC10 | 1.378 [35] | 0.630 [16] | 0.472 [12] | 0.031 [0.8] | 0.295 [7.5] |
| CPCC1A | 2.008 [51] | 0.512 [13] | 0.394 [10] | 0.029 [0.75] | 0.197 [5] |

MATERIAL SPECIFICATIONS

Part Marking: Dale, model, wattage, value, tolerance, date code

CPCC

Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Core: alumina ceramic

Body: steatite ceramic case with cement potting compound

End Caps: tin plated steel

Terminals: tinned copper

CPCF

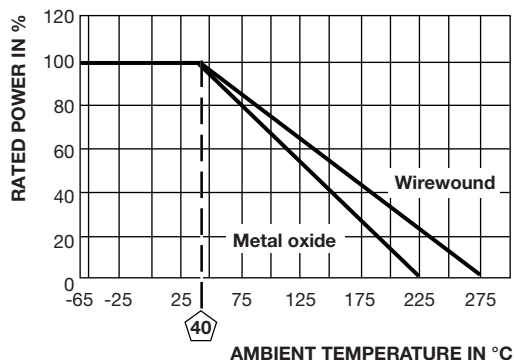
Element: nickel oxide

Core: alumina ceramic

Body: steatite ceramic case with inorganic potting compound

End Caps: brass alloy

Terminals: tinned copper

DERATING

| PERFORMANCE | | |
|---------------------------------|--|------------------------|
| TEST | CONDITIONS OF TEST | CPCC, CPCF TEST LIMITS |
| Thermal Shock | -55 °C to +275 °C (+225 °C for metal oxide), 5 cycles, 30 min dwell time | ± (5.0 % + 0.05 Ω) ΔR |
| Short Time Overload | 5 x rated power for 5 s | ± (4.0 % + 0.05 Ω) ΔR |
| Dielectric Withstanding Voltage | 1000 V _{RMS} for 1 min | ± (2.0 % + 0.05 Ω) ΔR |
| Low Temperature Operation | -65 °C, full rated working voltage for 45 min | ± (3.0 % + 0.05 Ω) ΔR |
| Bias Humidity | 75 °C, 90 % to 100 % RH, 240 h | ± (5.0 % + 0.05 Ω) ΔR |
| Load Life | 1000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF" | ± (10.0 % + 0.05 Ω) ΔR |
| Terminal Strength | 5 s to 10 s 10 pound pull test | ± (2.0 % + 0.05 Ω) ΔR |
| Resistance to Solder Heat | Terminal immersed 3.5 s in molten solder up to body | ± (4.0 % + 0.05 Ω) ΔR |



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