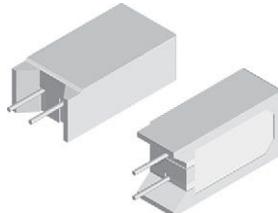


Wirewound / Metal Film Resistors, Commercial Power, Vertical Mount



FEATURES

- Board space saving due to vertical design
- Meets or exceeds requirements of EIA standard RS-344
- High power to size ratio
- Special inorganic 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*
Available
HALOGEN FREE
Available
GREEN
(S-2008)
Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | |
|------------------------------------|------------------|------------------------------------|---------------------------|--------------------|--------------------|
| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING $P_{70} \text{ °C W}$ | RESISTANCE RANGE Ω | TOLERANCE $\pm \%$ | WEIGHT (typical) g |
| CPCP02 | CPCP-2 | 2 | 0.1 to 4K | 1, 5 | 3.5 |
| CPCF02 | CPCF-2 | 2 | 501 to 150K | 1, 5, 10 | 3.5 |
| CPCP03 | CPCP-3 | 3 | 0.1 to 5K | 1, 5 | 5.5 |
| CPCF03 | CPCF-3 | 3 | 801 to 150K | 1, 5, 10 | 5.5 |
| CPCP05 | CPCP-5 | 5 | 0.1 to 5K | 1, 5 | 6.9 |
| CPCF05 | CPCF-5 | 5 | 801 to 150K | 1, 5, 10 | 6.9 |
| CPCP10 | CPCP-10 | 10 | 0.1 to 8K | 1, 5 | 14.3 |

Note

- Non-inductively wound types are available on the CPCP series signified by a 1 in the special character on part number such as CPCP0510R00FB321. Maximum resistance value will be 1/2 of the standard CPCP

| TECHNICAL SPECIFICATIONS | | | |
|---------------------------------|-----------------|--|---------------------|
| PARAMETER | UNIT | CPCPx | CPCFx |
| Temperature Coefficient | ppm/°C | $\pm 20 = 10 \Omega$ and above, $\pm 50 = 1.0 \Omega$ to 9.9Ω , $\pm 90 = 0.1 \Omega$ to 0.99Ω | ± 50 all values |
| Short Time Overload | - | 5 x rated power for 5 s | |
| Maximum Working Voltage | V | $(P \times R)^{1/2}$ | |
| Operating Temperature Range | °C | -65 to +275 | -65 to +225 |
| Terminal Strength | lb | 10 minimum | |
| Dielectric Withstanding Voltage | V _{AC} | 1000 | |

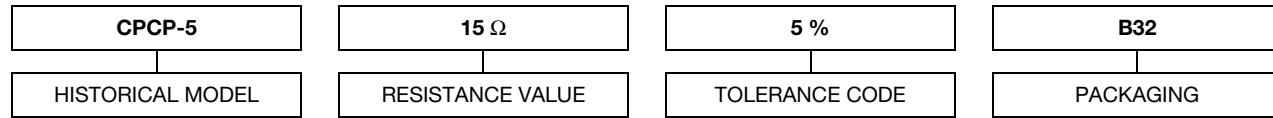
GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: CPCP0515R00JB32

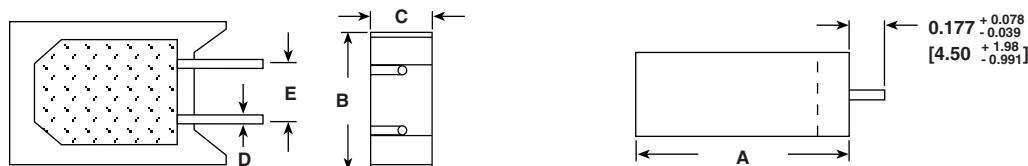


| GLOBAL MODEL | VALUE | TOLERANCE | PACKAGING | SPECIAL |
|--|---|---|--|--|
| (See Standard Electrical Specifications Global Model column for options) | R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω | F = \pm 1.0 % H = \pm 3.0 % J = \pm 5.0 % K = \pm 10.0 % | E32 = lead (Pb)-free two layer bulk E01 = lead (Pb)-free skin pack B32 = tin / lead two layer bulk J01 = tin / lead skin pack | (Dash number) (up to 3 digits) From 1 to 999 as applicable |

Historical Part Numbering Example: CPCP-5 15 Ω 5 % B32



DIMENSIONS in inches [millimeters]



| GLOBAL MODEL | DIMENSIONS in inches [millimeters] | | | | |
|----------------|------------------------------------|--------------------------|--|--------------------------|-------------------------|
| | A ± 0.031 [0.794] | B ± 0.031 [0.794] | C $+ 0.043$ [1.09] $- 0.012$ [0.305] | D ± 0.005 [0.127] | E ± 0.040 [1.02] |
| CPCP02, CPCF02 | 0.807 [20.50] | 0.433 [11.00] | 0.276 [7.01] | 0.032 [0.813] | 0.197 [5.00] |
| CPCP03, CPCF03 | 0.984 [24.99] | 0.472 [11.99] | 0.315 [8.00] | 0.032 [0.813] | 0.197 [5.00] |
| CPCP05, CPCF05 | 1.003 [25.48] | 0.512 [13.00] | 0.354 [8.99] | 0.032 [0.813] | 0.197 [5.00] |
| CPCP10 | 1.372 [34.85] | 0.633 [16.08] | 0.485 [12.32] | 0.040 [1.02] | 0.290 [7.37] |

MATERIAL SPECIFICATIONS

Part Marking:

DALE, model, wattage, value, tolerance, date code

CPCP:

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

Core: ceramic

Body: steatite ceramic case with inorganic potting compound

End Caps: stainless steel

Terminals: tinned Copperweld®

CPCF:

Element: metal film - nickel-chrome alloy

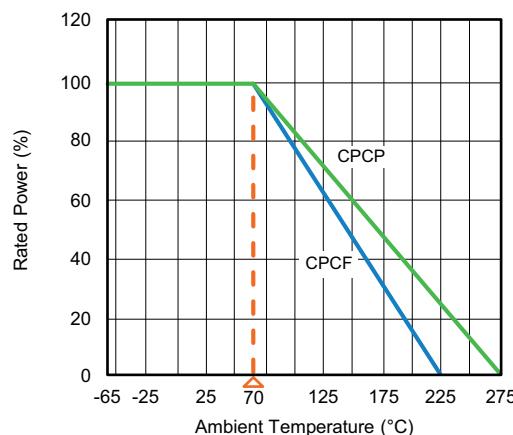
Core: Alumina ceramic

Body: steatite ceramic case with inorganic potting compound

End Caps: brass alloy

Terminals: solder-coated copper

DERATING



| PERFORMANCE | | | |
|---------------------------------|---|-----------------------|-----------------------|
| TEST | CONDITIONS OF TEST | CPCP TEST LIMITS | CPCF TEST LIMITS |
| Thermal Shock | -55 °C to +275 °C (+225 °C for CPCF), 5 cycles, 30 min dwell time | ± (2.0 % + 0.05 Ω) ΔR | ± (5.0 % + 0.05 Ω) ΔR |
| Short Time Overload | 5 x rated power for 5 s | ± (2.0 % + 0.05 Ω) ΔR | ± (4.0 % + 0.05 Ω) ΔR |
| Dielectric Withstanding Voltage | 1000 V _{RMS} for 1 min | ± (0.1 % + 0.05 Ω) ΔR | ± (2.0 % + 0.05 Ω) ΔR |
| Low Temperature Storage | -65 °C, full rated working voltage for 45 min | ± (2.0 % + 0.05 Ω) ΔR | ± (3.0 % + 0.05 Ω) ΔR |
| Bias Humidity | 75 °C, 90 % to 100 % RH, 240 h | ± (2.0 % + 0.05 Ω) ΔR | ± (5.0 % + 0.05 Ω) ΔR |
| Load Life | 1000 h at rated power, +40 °C, 1.5 h "ON", 0.5 h "OFF" | ± (5.0 % + 0.05 Ω) ΔR | ± (5.0 % + 0.05 Ω) ΔR |
| Terminal Strength | 5 s to 10 s 10 pound pull test | ± (1.0 % + 0.05 Ω) ΔR | ± (1.0 % + 0.05 Ω) ΔR |
| Resistance to Solder Heat | Terminal immersed 3.5 s in molten solder up to body | ± (1.0 % + 0.05 Ω) ΔR | ± (4.0 % + 0.05 Ω) ΔR |

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