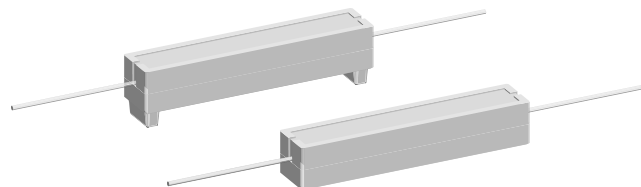




## Wirewound Resistors, Commercial Power, Axial Lead



### FEATURES

- High performance for low cost
- Meets or exceeds requirements of EIA Standard RS-344
- High power to size ratio
- Ceramic cases are available with circuit board stand-offs (designated with a -3 model ending)
- 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

HALOGEN  
**FREE**  
Available

**GREEN**  
(5-2008)  
Available

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40^{\circ}\text{C}}$ W	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm \%$	WEIGHT (TYPICAL) g
CP0002	2	0.1 to 1K	5, 10	2.0
CP0002...3	2	0.1 to 1K	5, 10	2.2
CP0003	3	0.1 to 2K	5, 10	3.4
CP0003...3	3	0.1 to 2K	5, 10	3.6
CP0005	5	0.1 to 2.4K	5, 10	4.8
CP0005...3	5	0.1 to 2.4K	5, 10	5.0
CP0007	7	0.1 to 7K	5, 10	6.8
CP0007...3	7	0.1 to 7K	5, 10	7.0
CP0010	10	0.1 to 11K	5, 10	9.5
CP0010...3	10	0.1 to 11K	5, 10	9.9
CP0015	15	0.1 to 11K	5, 10	16.8
CP0015...3	15	0.1 to 11K	5, 10	17.4
CP0020	20	0.1 to 16K	5, 10	22.8
CP0020...3	20	0.1 to 16K	5, 10	23.6
CP0022	22	0.1 to 16K	5, 10	24.5
CP0022...3	22	0.1 to 16K	5, 10	25.3
CP0025	25	0.1 to 16K	5, 10	37.0

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	$\pm 300$ 1 $\Omega$ and above; $\pm 600$ below 1 $\Omega$
Short Time Overload	-	5 x rated power for 5 s
Terminal Strength	lb	10 minimum
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +275
Dielectric Withstanding Voltage	$V_{AC}$	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$

#### Note

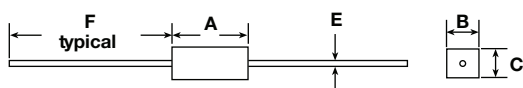
- Wirewound CP resistors can reliably function as a fuse and as a resistor. Such components involve compromise between fusing and resistive functions; therefore, each design should be tailored to the application to ensure optimum performance. Contact factory by using the e-mail address at the bottom of this page for design assistance



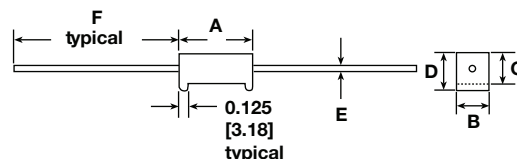
GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering Example: CP000515R00JE143																	
C	P	0	0	0	5	1	5	R	0	0	J	E	1	4	3		
GLOBAL MODEL (See Standard Electrical Specifications Global Model column for options)				VALUE R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω			TOLERANCE J = ± 5.0 % K = ± 10.0 %		PACKAGING E14 = lead (Pb)-free bulk pack E31 = lead (Pb)-free four layer bulk pack B14 = bulk pack B31 = four layer bulk pack				SPECIAL (Dash number) (Up to 3 digits) From 1 to 999 as applicable				
Historical Part Numbering Example: CP-5-3 15 Ω 5 % B14																	
CP-5-3			15 Ω			5 %			B14								
HISTORICAL MODEL			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING								

**DIMENSIONS** in inches [millimeters]

CPxxxx



CPxxxx...3



GLOBAL MODEL	DIMENSIONS in inches [millimeters]					
	A <sup>(1)</sup> ± 0.031 [0.794]	B ± 0.031 [0.794]	C ± 0.031 [0.794]	D ± 0.031 [0.794]	E ± 0.002 [0.050]	F ± 0.125 [3.175]
CP0002	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	-	0.032 [0.813]	1.500 [38.10]
CP0002...3	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	0.313 [7.94]	0.032 [0.813]	1.500 [38.10]
CP0003	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	-	0.036 [0.914]	1.500 [38.10]
CP0003...3	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	0.375 [9.52]	0.036 [0.914]	1.500 [38.10]
CP0005	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
CP0005...3	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.406 [10.32]	0.036 [0.914]	1.500 [38.10]
CP0007	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
CP0007...3	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	1.500 [38.10]
CP0010	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.500 [38.10]
CP0010...3	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	1.500 [38.10]
CP0015	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
CP0015...3	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]
CP0020 <sup>(2)</sup>	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
CP0020...3	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]
CP0022	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]
CP0022...3	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]	1.500 [38.10]
CP0025	2.500 [63.50]	0.625 [15.87]	0.625 [15.87]	-	0.040 [1.016]	1.500 [38.10]

**Note**

<sup>(1)</sup> Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side



## MATERIAL SPECIFICATIONS

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

**Core:** woven fiberglass

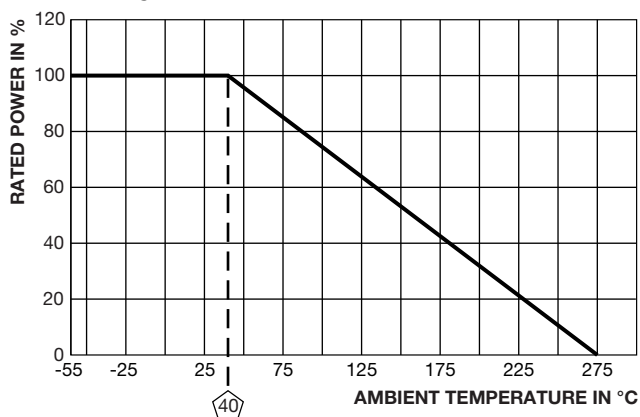
**Body:** steatite ceramic case with inorganic potting compound

**End Caps:** tin plated steel

**Terminals:** tinned copper

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

## DERATING



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA-344)
Thermal Shock	-55 °C to +275 °C, 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 <sub>RMS</sub> , for 1 min	± (2.0 % + 0.05 Ω) ΔR
Low Temperature Storage	-65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) ΔR
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 pounds for 30 s; body twisted about axis, 3 x 360° rotations	± (2.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body	± (4.0 % + 0.05 Ω) ΔR



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