



Vishay Dale

# 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.vishav.com/doc?99912









FREE

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	POWER RATING  P <sub>40°C</sub> W	RESISTANCE RANGE $\Omega$	TOLERANCE ± %	WEIGHT (TYPICAL) g	
CP0002	2	0.1 to 1K	5, 10	2.0	
CP00023	2	0.1 to 1K	5, 10	2.2	
CP0003	3	0.1 to 2K	5, 10	3.4	
CP00033	3	0.1 to 2K	5, 10	3.6	
CP0005	5	0.1 to 2.4K	5, 10	4.8	
CP00053	5	0.1 to 2.4K	5, 10	5.0	
CP0007	7	0.1 to 7K	5, 10	6.8	
CP00073	7	0.1 to 7K	5, 10	7.0	
CP0010	10	0.1 to 11K	5, 10	9.5	
CP00103	10	0.1 to 11K	5, 10	9.9	
CP0015	15	0.1 to 11K	5, 10	16.8	
CP00153	15	0.1 to 11K	5, 10	17.4	
CP0020	20	0.1 to 16K	5, 10	22.8	
CP00203	20	0.1 to 16K	5, 10	23.6	
CP0022	22	0.1 to 16K	5, 10	24.5	
CP00223	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/°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	°C	-65 to +275			
Dielectric Withstanding Voltage	V <sub>AC</sub>	1000			
Maximum Working Voltage	V	(P x R) <sup>1/2</sup>			

#### Note

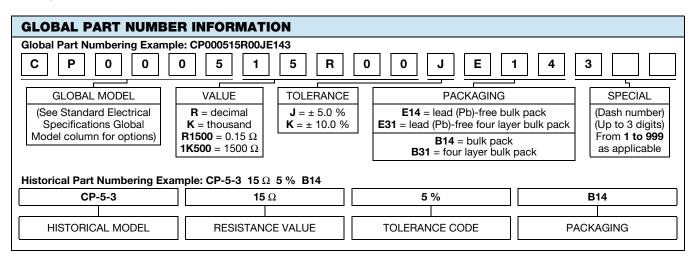
Wirewound CP resistors can reliably function as a fuse and as a resistor. Such components involve compromise between fusing and resistive
functions; therefore, each design should be tailored to the application to ensure optimum performance. Contact factory by using the e-mail
address at the bottom of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



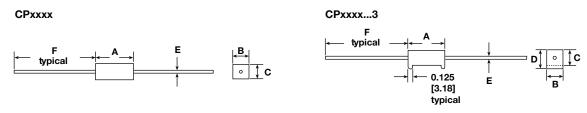


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### **DIMENSIONS** in inches [millimeters]



	DIMENSIONS in inches [millimeters]						
GLOBAL MODEL	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]	
CP00023	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]	
CP00033	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]	
CP00053	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]	
CP00073	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]	
CP00103	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]	
CP00153	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 (2)	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.500 [38.10]	
CP00203	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]	
CP00223	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



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### **MATERIAL SPECIFICATIONS**

Element: copper-nickel alloy or nickel-chrome alloy,

depending on resistance value

Core: woven fiberglass

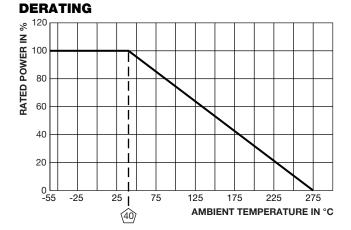
Body: steatite ceramic case with inorganic potting

compound

End Caps: tin plated steel
Terminals: tinned copper

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

code



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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