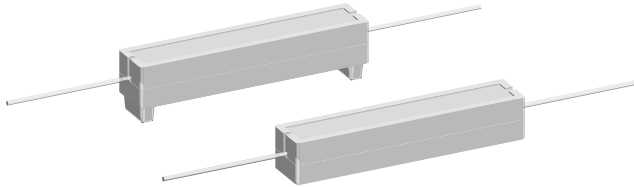


Wirewound/Metal Oxide Resistors, Commercial Power, Axial Lead



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
- Compliant to RoHS Directive 2002/95/EC



RoHS*
COMPLIANT
GREEN
(5-2008)**
Available

STANDARD ELECTRICAL SPECIFICATIONS				
GLOBAL MODEL	POWER RATING $P_{40^\circ C}$ W	RESISTANCE RANGE (Ω) $\pm 10\%$ standard, $\pm 5\%$ available		WEIGHT (typical) g
		WIREWOUND (1)	METAL OXIDE (1)	
CP0002	2	0.1 to 1K	100 to 30K	2.0
CP0002...3	2	0.1 to 1K	100 to 30K	2.2
CP0003	3	0.1 to 2K	150 to 33K	3.4
CP0003...3	3	0.1 to 2K	150 to 33K	3.6
CP0005	5	0.1 to 2.4K	150 to 50K	4.8
CP0005...3	5	0.1 to 2.4K	150 to 50K	5.0
CP0007	7	0.1 to 5K	1K to 50K	6.8
CP0007...3	7	0.1 to 5K	1K to 50K	7.0
CP0010	10	0.1 to 7K	1K to 50K	9.5
CP0010...3	10	0.1 to 7K	1K to 50K	9.9
CP0015	15	0.1 to 8K	1K to 50K	16.8
CP0015...3	15	0.1 to 8K	1K to 50K	17.4
CP0020	20	0.1 to 10K	1K to 50K	22.8
CP0020...3	20	0.1 to 10K	-	23.6
CP0022	22	0.1 to 10K	-	24.5
CP0022...3	22	0.1 to 10K	-	25.3
CP0025	25	0.1 to 10K	-	37.0

Note

(1) To specifically order a Wirewound sub-assembly for resistance values that overlap between the Wirewound and Metal Oxide technologies, the model will be a CPxxxx...85 for standard body and CPxxxx...91 for body with stand-offs. To specifically order a Metal Oxide sub-assembly for resistance values that overlap between the Wirewound and Metal Oxide technologies, the model will be a CPxxxx...100 for a standard body and CPxxxx...101 for body with stand-offs. If no dash type is specified, either technology may be supplied.

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	WIREWOUND CHARACTERISTICS
Temperature Coefficient	ppm/ $^\circ C$	± 600 below 1 Ω , ± 300 1 Ω and above
Short Time Overload	-	5 x rated power for 5 s
Terminal Strength	lb	10 minimum
Operating Temperature Range	$^\circ C$	- 65 to + 275
Dielectric Withstanding Voltage	V_{AC}	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$
PARAMETER	UNIT	METAL OXIDE CHARACTERISTICS
Temperature Coefficient	ppm/ $^\circ C$	± 300 for CP0002 to CP0005; ± 400 for CP0007 to CP0020
Short Time Overload	-	5 x rated power for 5 s
Terminal Strength	lb	10 minimum
Operating Temperature Range	$^\circ C$	- 65 to + 225
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.

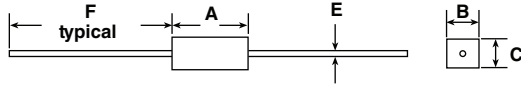
GLOBAL PART NUMBER INFORMATION																	
New Global Part Numbering: CP000515R00JB143 (preferred part number format)																	
C	P	0	0	0	5	1	5	R	0	0	J	B	1	4	3		
GLOBAL MODEL (See Standard Electrical Specifications Global Model column for options)		VALUE R = Decimal K = Thousand R1500 = 0.15 Ω 1K500 = 1500 Ω		TOLERANCE H = $\pm 3.0\%$ J = $\pm 5.0\%$ K = $\pm 10.0\%$		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 Number Example: CP-5-3 15 Ω 5% B14 (will continue to be accepted)																	
CP-5-3		15 Ω		5%		B14											
HISTORICAL MODEL		RESISTANCE VALUE		TOLERANCE CODE		PACKAGING											

* Pb containing terminations are not RoHS compliant, exemptions may apply

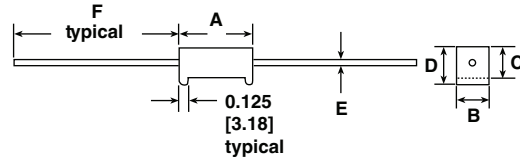
** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

DIMENSIONS in inches [millimeters]

CPxxxx



CPxxxx...3



GLOBAL MODEL	DIMENSIONS in inches [millimeters]							
	A ⁽¹⁾ ± 0.031 [0.794]	B ± 0.031 [0.794]	C ± 0.031 [0.794]	D ± 0.031 [0.794]	E ± 0.001 [0.025]		F	
					WIREWOUND	METAL OXIDE	WIREWOUND ± 0.125 [3.175]	METAL OXIDE MINIMUM
CP0002	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	-	0.032 [0.813]	0.0236 [0.600]	1.500 [38.10]	0.750 [19.05]
CP0002...3	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	0.313 [7.94]	0.032 [0.813]	0.0236 [0.600]	1.500 [38.10]	0.750 [19.05]
CP0003	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0003...3	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	0.375 [9.52]	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0005	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0005...3	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	10.32 [0.406]	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0007	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0007...3	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0010	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0010...3	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0015	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0015...3	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	15.87 [0.625]	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
CP0020 ⁽²⁾	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	0.032 [0.813]	1.500 [38.10]	1.000 [25.40]
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]	-

Notes
⁽¹⁾ Potting compound may extend outside of ceramic case up to 1.52 [0.060] maximum per side.

⁽²⁾ Dimensions for the metal oxide are: A = 2.360 [59.94], B = 0.570 [14.48], C = 0.530 [13.46], E = 0.032 [0.813], F = 1.000 [25.40]

MATERIAL SPECIFICATIONS
Element: Wirewound = Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Metal Oxide = High temperature fired metal oxide film

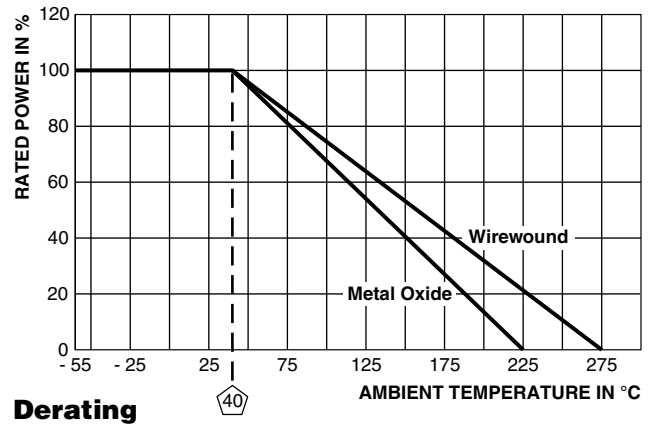
Core: Wirewound = Woven fiberglass

Metal Oxide = Alumina ceramic

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 (+ 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 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



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.