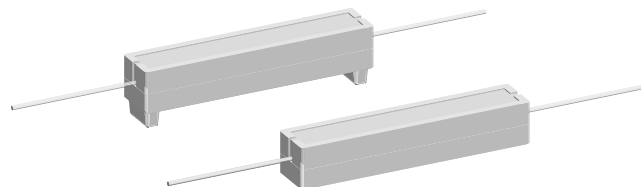




Wirewound Resistors, Commercial Power, Axial Lead



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



RoHS
COMPLIANT

HALOGEN
FREE
Available

GREEN
[5-2008]
Available

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40^{\circ}\text{C}}$ W	RESISTANCE RANGE Ω	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/ $^{\circ}\text{C}$	± 300 1 Ω and above; ± 600 below 1 Ω
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

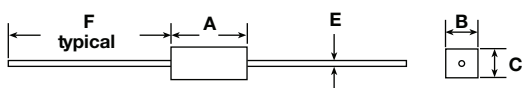
- Wirewound CP resistors can reliably function as a fuse and as a resistor. Such components involve compromise between fusing and resistive functions; therefore, each design should be tailored to the application to ensure optimum performance. Contact factory by using the e-mail address at the bottom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



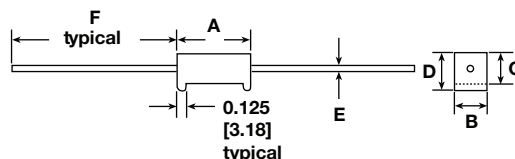
GLOBAL PART NUMBER INFORMATION																	
Global Part Numbering Example: CP000515R00JE143																	
C	P	0	0	0	5	1	5	R	0	0	J	E	1	4	3		
GLOBAL MODEL (See Standard Electrical Specifications Global Model column for options)				VALUE R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω			TOLERANCE 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 ⁽¹⁾ ± 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 ⁽²⁾	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

⁽¹⁾ 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

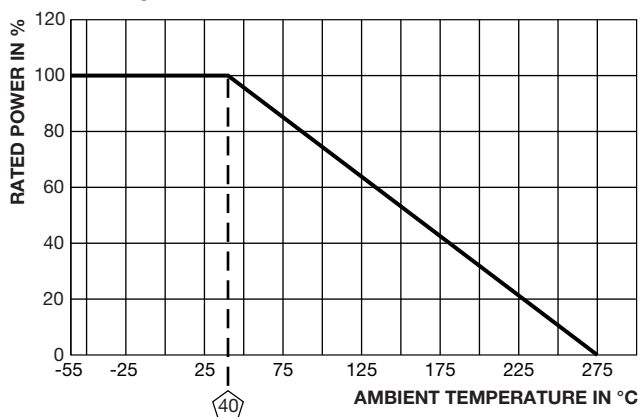
Body: steatite ceramic case with inorganic potting compound

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 _{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, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

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 in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

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