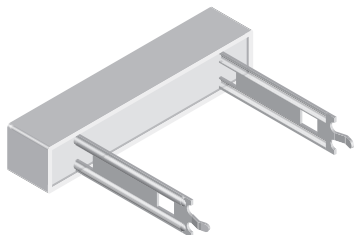




Wirewound/Metal Oxide Resistors, Commercial Power, Radial Terminals



FEATURES

- Direct mounting on printed circuit board
- Circuit board lock-in mounting tabs
- High performance for low cost
- 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



STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL (1)	POWER RATING $P_{40\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE	RESISTANCE RANGE	TOLERANCE \pm %	WEIGHT (typical) g
		Ω WIREWOUND	Ω METAL OXIDE		
CPR03...xx	3	0.1 to 100	-	5, 10	5.5
CPR05...xx	5	0.1 to 100	110 to 33K	5, 10	6.5
CPR10...xx	10	0.5 to 100	110 to 10K	5, 10	10
CPR15...xx	15	1.0 to 100	110 to 10K	5, 10	20.3
CPR20...xx	20	1.0 to 100	110 to 10K	5, 10	25.5

Notes

- E24 decade values are available, although others may be available upon request
- The CPR07 product series was recently terminated and is not recommended for new designs. Hence it was removed from the datasheet
- (1) The xx is for the two digit "special" number as specified in Global Part Number Information section. Standard part number without the two digit "special" is 10.5 mm length (15 mm for CPR20), 1 pin terminals

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPR HIGH VOLUME RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	\pm 400
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Terminal Strength	lb	10 minimum
Operating Temperature Range	°C	-65 to +275 for wirewound, -65 to +225 for metal oxide

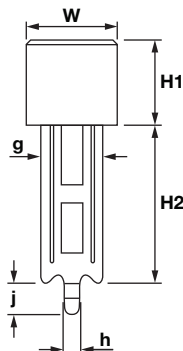
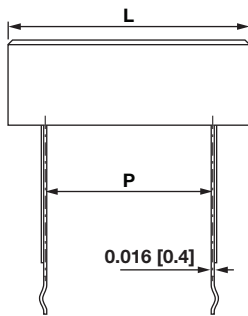
GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: CPR05100R0JE6630

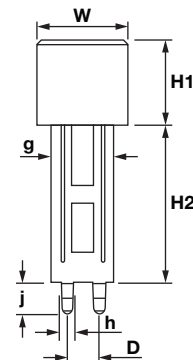
C	P	R	0	5	1	0	0	R	0	J	E	6	6	3	0	
GLOBAL MODEL			VALUE			TOLERANCE			PACKAGING			SPECIAL				
CPR03 CPR05 CPR10 CPR15 CPR20			R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω			J = \pm 5.0 % K = \pm 10.0 %			E66 = lead (Pb)-free, bulk			Blank = short, 1 pin CPRxx...30 = long, 1 pin CPRxx...31 = short, 2 pin CPRxx...32 = long, 2 pin				



DIMENSIONS in inches [millimeters]



Terminal style 1 (Single Pin)



Terminal style 2 (Double Pin)

GLOBAL MODEL	TERMINAL STYLE	DIMENSIONS in inches [millimeters]								
		L ± 0.059 [1.5]	W ± 0.039 [1.0]	H1 ± 0.039 [1.0]	H2 ± 0.039 [1.0]	D ± 0.005 [0.13]	P ± 0.059 [1.5]	G ± 0.008 [0.2]	H ± 0.008 [0.2]	J ± 0.039 [1.0]
CPR03	1	0.944 [24]	0.354 [9.0]	0.354 [9.0]	0.413 [10.5]	-	0.492 [12.5]	0.197 [5.0]	0.059 [1.5]	0.193 [4.9]
CPR03...30	1	0.944 [24]	0.354 [9.0]	0.354 [9.0]	0.984 [25.0]	-	0.492 [12.5]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR03...31	2	0.944 [24]	0.354 [9.0]	0.354 [9.0]	0.472 [12.0]	0.197 [5.0]	0.492 [12.5]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR03...32	2	0.944 [24]	0.354 [9.0]	0.354 [9.0]	0.984 [25.0]	0.197 [5.0]	0.492 [12.5]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR05	1	1.10 [28]	0.394 [10.0]	0.394 [10.0]	0.413 [10.5]	-	0.590 [15.0]	0.197 [5.0]	0.059 [1.5]	0.193 [4.9]
CPR05...30	1	1.10 [28]	0.394 [10.0]	0.394 [10.0]	0.984 [25.0]	-	0.590 [15.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR05...31	2	1.10 [28]	0.394 [10.0]	0.394 [10.0]	0.472 [12.0]	0.197 [5.0]	0.590 [15.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR05...32	2	1.10 [28]	0.394 [10.0]	0.394 [10.0]	0.984 [25.0]	0.197 [5.0]	0.590 [15.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR10	1	1.89 [48]	0.394 [10.0]	0.394 [10.0]	0.413 [10.5]	-	1.26 [32.0]	0.197 [5.0]	0.059 [1.5]	0.193 [4.9]
CPR10...30	1	1.89 [48]	0.394 [10.0]	0.394 [10.0]	0.984 [25.0]	-	1.26 [32.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR10...31	2	1.89 [48]	0.394 [10.0]	0.394 [10.0]	0.472 [12.0]	0.197 [5.0]	1.26 [32.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR10...32	2	1.89 [48]	0.394 [10.0]	0.394 [10.0]	0.984 [25.0]	0.197 [5.0]	1.26 [32.0]	0.287 [7.3]	0.059 [1.5]	0.193 [4.9]
CPR15	1	1.89 [48]	0.492 [12.5]	0.472 [12.0]	0.413 [10.5]	-	1.26 [32.0]	0.197 [5.0]	0.059 [1.5]	0.193 [4.9]
CPR15...30	1	1.89 [48]	0.492 [12.5]	0.472 [12.0]	0.984 [25.0]	-	1.26 [32.0]	0.287 [7.3]	0.059 [1.5]	0.199 [5.1]
CPR15...32	2	1.89 [48]	0.492 [12.5]	0.472 [12.0]	1.18 [30.0]	0.197 [5.0]	1.26 [32.0]	0.394 [10.0]	0.069 [1.75]	0.199 [5.1]
CPR20	1	2.461 [62.5]	0.492 [12.5]	0.492 [12.5]	0.591 [15.0]	-	1.65 [42.0]	0.394 [10.0]	0.106 [2.7]	0.193 [4.9]
CPR20...30	1	2.461 [62.5]	0.492 [12.5]	0.492 [12.5]	0.984 [25.0]	-	1.65 [42.0]	0.394 [10.0]	0.106 [2.7]	0.193 [4.9]
CPR20...32	2	2.461 [62.5]	0.492 [12.5]	0.492 [12.5]	1.18 [30.0]	0.197 [5.0]	1.65 [42.0]	0.394 [10.0]	0.069 [1.75]	0.199 [5.1]



MATERIAL SPECIFICATIONS

Element:

wirewound = copper-nickel alloy or nickel-chrome alloy, depending on resistance value;
metal oxide = high temperature fired metal oxide film

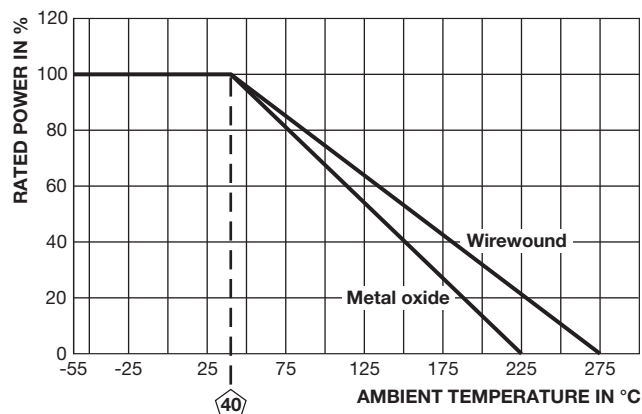
Core: ceramic

Body: steatite ceramic case with cement potting compound

Terminals: tin plated steel

Part Marking: DALE, model, wattage, value, tolerance, date code

DERATING



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
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 Operation	-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, +40 °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.