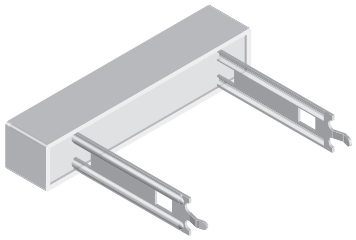
Wirewound/Metal Oxide Resistors, Commercial Power, Radial Terminals



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

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL (1)	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω WIREWOUND	RESISTANCE RANGE Ω METAL OXIDE	TOLERANCE ± %	WEIGHT (typical) g
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	± 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

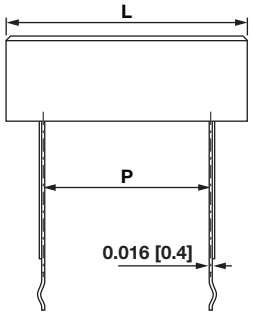
Global Part Numbering Example: CPR05100R0JE6630

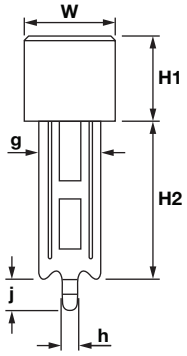
C	P	R	0	5	1	0	0	R	0	J	E	6	6	3	0	

GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
CPR03 **CPR05** **CPR10** **CPR15** **CPR20**	**R** = decimal **K** = thousand **R1500** = 0.15 Ω **1K500** = 1500 Ω	**J** = ± 5.0 % **K** = ± 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

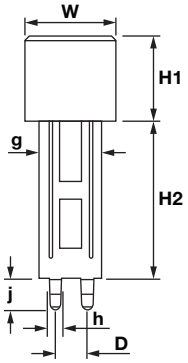
For technical questions, contact: ww2aresistors@vishay.com

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

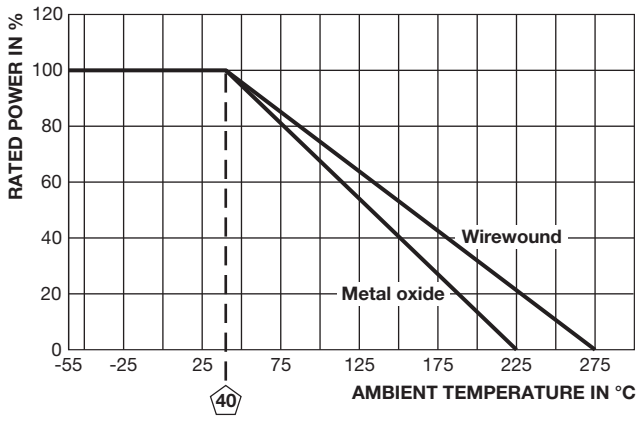
Core: ceramic

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

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