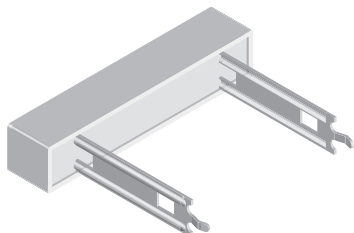




# Wirewound/Metal Oxide Resistors, Commercial Power, Radial Terminals



## 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL (1)	POWER RATING $P_{40^\circ\text{C}}$ W	RESISTANCE RANGE	RESISTANCE RANGE	TOLERANCE $\pm$ %	WEIGHT (typical) g
		$\Omega$ WIREWOUND	$\Omega$ 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

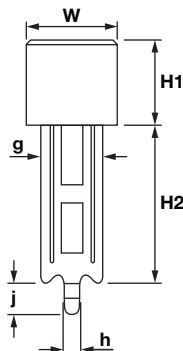
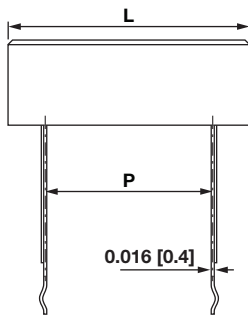
- E24 decade values are available, although others may be available upon request
- The CPR07 product series was recently terminated and is not recommended for new designs. Hence it was removed from the datasheet
- (1) The xx is for the two digit "special" number as specified in Global Part Number Information 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

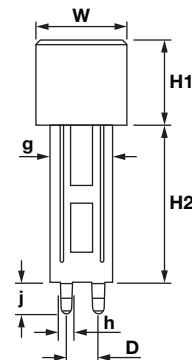
GLOBAL PART NUMBER INFORMATION																
Global Part Numbering Example: CPR05100R0JE6630																
C	P	R	0	5	1	0	0	R	0	J	E	6	6	3	0	
GLOBAL MODEL			VALUE			TOLERANCE			PACKAGING			SPECIAL				
CPR03 CPR05 CPR10 CPR15 CPR20			R = decimal K = thousand R1500 = 0.15 $\Omega$ 1K500 = 1500 $\Omega$			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

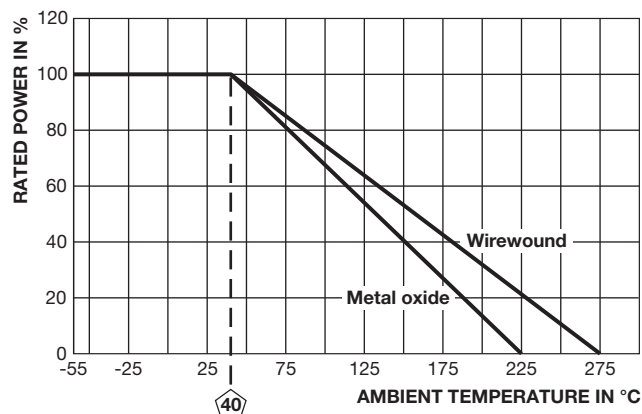
**Core:** ceramic

**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 <sub>RMS</sub> 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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