

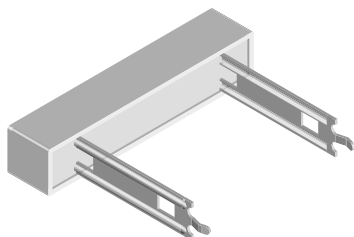


**THE DATASHEET OF  
CPR20R2000KE10**





# Wirewound Resistors, Commercial Power, Radial Terminals



Please reference the Vishay Dale closest equivalent: CPR High Volume ([www.vishay.com/doc?30261](http://www.vishay.com/doc?30261)).

**Notes**

- There may be slight differences between the CPR product and the CPR High Volume product.
- See the cross-reference file for a complete list of differences and part number crosses: [www.vishay.net/files/Cross-Reference%20Data-without%20PCN%20-%20%20PCN-DR-020-2015%20Rev%200.pdf](http://www.vishay.net/files/Cross-Reference%20Data-without%20PCN%20-%20%20PCN-DR-020-2015%20Rev%200.pdf).

**FEATURES**

- Direct mounting on printed circuit board
- Circuit board lock-in mounting tabs
- High performance for low cost
- Meets or exceeds requirements of EIA Standard RS-344
- 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)



**Note**

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm \%$	WEIGHT (typical) g
CPR03	CPR-3	3	0.1 to 1K	5, 10	5.6
CPR05	CPR-5	5	0.1 to 1K	5, 10	6.6
CPR07	CPR-7	7	0.1 to 1.429K	5, 10	9.4
CPR10	CPR-10	10	0.1 to 2K	5, 10	10.0
CPR15	CPR-15	15	0.1 to 2K	5, 10	20.3
CPR20	CPR-20	20	0.15 to 2.855K	5, 10	25.6

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	CPR RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm 300$ for 1.0 $\Omega$ and above; $\pm 600$ for less than 1.0 $\Omega$
Short Time Overload	-	5 x rated power for 5 s
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	$V_{AC}$	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	-65 to +275

**Note**

- Wirewound CPR 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: **CPR0515R00JE14**

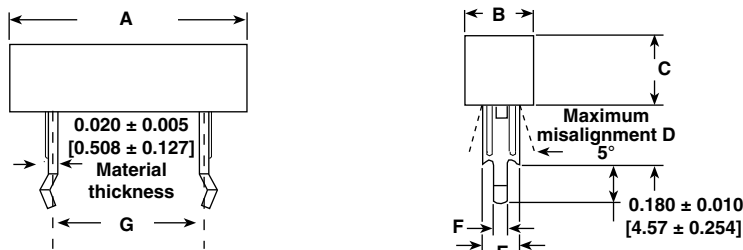
C	P	R	0	5	1	5	R	0	0	J	E	1	4			
GLOBAL MODEL			VALUE			TOLERANCE			PACKAGING			SPECIAL				
CPR03 CPR05 CPR07 CPR10 CPR15 CPR20			R = decimal K = thousand R1500 = 0.15 $\Omega$ 1K500 = 1500 $\Omega$			H = $\pm 3.0 \%$ J = $\pm 5.0 \%$ K = $\pm 10.0 \%$			E14 = lead (Pb)-free bulk <sup>(1)</sup> E31 = lead (Pb)-free four layer bulk <sup>(1)</sup> E10 = lead (Pb)-free foam pack  B14 = tin/lead bulk <sup>(1)</sup> B31 = tin/lead four layer bulk <sup>(1)</sup> F10 = tin/lead foam pack			(dash number) (up to 3 digits) from 1 to 999 as applicable				
Historical Part Numbering example: <b>CPR-5 15 <math>\Omega</math> 5 % B14</b>																
CPR-5			15 $\Omega$			5 %			B14							
HISTORICAL MODEL			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING							

**Note**

<sup>(1)</sup> Only for 3 W and 5 W sizes.



**DIMENSIONS** in inches [millimeters]



GLOBAL MODEL	DIMENSIONS in inches [millimeters]						
	A ± 0.040 [1.02]	B ± 0.031 [0.787]	C ± 0.031 [0.787]	D + 0.080 [2.03] - 0.040 [1.02]	E ± 0.012 [0.305]	F ± 0.008 [0.203]	G ± 0.060 [1.52]
CPR03	0.906 [23.01]	0.375 [9.53]	0.375 [9.53]	0.394 [10.01]	0.287 [7.29]	0.055 [1.40]	0.500 [12.70]
CPR05	1.060 [26.92]	0.375 [9.53]	0.360 [9.14]	0.394 [10.01]	0.287 [7.29]	0.055 [1.40]	0.590 [14.99]
CPR07	1.398 [35.51]	0.375 [9.53]	0.360 [9.14]	0.984 [24.99]	0.287 [7.29]	0.055 [1.40]	0.886 [22.50]
CPR10	1.888 [47.96]	0.375 [9.53]	0.360 [9.14]	0.984 [24.99]	0.287 [7.29]	0.055 [1.40]	1.380 [35.05]
CPR15	1.888 [47.96]	0.500 [12.70]	0.500 [12.70]	1.180 [29.97]	0.394 [10.01]	0.106 [2.69]	1.280 [32.51]
CPR20	2.498 [63.45]	0.500 [12.70]	0.500 [12.70]	1.180 [29.97]	0.394 [10.01]	0.106 [2.69]	1.870 [47.50]

**MATERIAL SPECIFICATIONS**

**Element:** copper-nickel alloy or nickel-chrome alloy, depending on resistance value

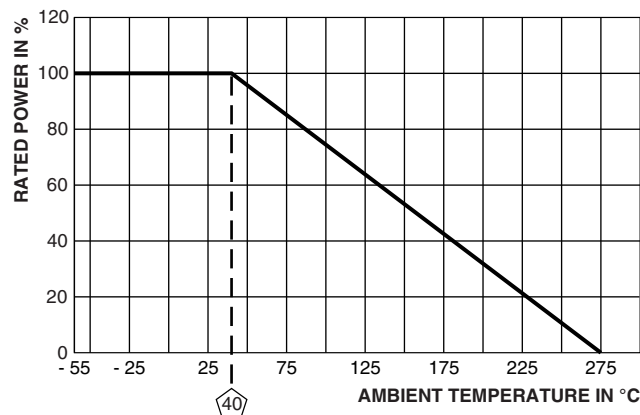
**Core:** woven fiberglass

**Body:** steatite ceramic case with inorganic potting compound

**Terminals:** tin/lead plated CRS (Lead (Pb)-free will be 100 % tin)

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

**DERATING**



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA RS-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 <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	10 pounds in axial direction for 30 s	± (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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