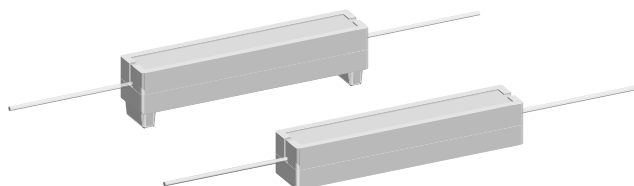


## Wirewound Resistors, Commercial Power, Axial Lead



### FEATURES

- High power to size ratio
- Ceramic cases are available with circuit board stand-offs (designated with a -3 model ending)
- Superior surge capability
- Complete welded construction
- Available in non-inductive styles with Aryton-Perry winding (CPWN in lieu of CPW, maximum resistance is one-half CPW range)
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package



**RoHS\***  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$ $\pm 1\%$ , $\pm 2\%$ , $\pm 3\%$ , $\pm 5\%$	WEIGHT (typical) g
CPW02	CPW-2	2	0.1 - 7K	2.0
CPW02...3	CPW-2-3	2	0.1 - 7K	2.2
CPW03	CPW-3	3	0.1 - 7.5K	3.4
CPW03...3	CPW-3-3	3	0.1 - 7.5K	3.6
CPW05	CPW-5	5	0.1 - 8.5K	4.8
CPW05...3	CPW-5-3	5	0.1 - 8.5K	5.0
CPW07	CPW-7	7	0.1 - 18K	6.8
CPW07...3	CPW-7-3	7	0.1 - 18K	7.0
CPW10	CPW-10	10	0.12 - 30K	9.5
CPW10...3	CPW-10-3	10	0.12 - 30K	9.9
CPW15	CPW-15	15	0.12 - 30K	16.8
CPW15...3	CPW-15-3	15	0.12 - 30K	17.4
CPW20	CPW-20	20	0.18 - 45K	22.8
CPW20...3	CPW-20-3	20	0.18 - 45K	23.6

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPW RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm 90$ below 1.0 $\Omega$ , $\pm 50$ for 1.0 $\Omega$ to 9.9 $\Omega$ , $\pm 30$ for 10 $\Omega$ and above
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	- 65 to + 275
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	V <sub>AC</sub>	1000

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPW0515R00JB313 (preferred part number format)

C	P	W	0	5	1	5	R	0	0	J	B	3	1	3		
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GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
(See Standard Electrical Specifications Global Model column for options)	R = Decimal K = Thousand R1500 = 0.15 $\Omega$ 1K500 = 1500 $\Omega$	D = $\pm 0.5\%$ F = $\pm 1.0\%$ G = $\pm 2.0\%$ H = $\pm 3.0\%$ J = $\pm 5.0\%$ K = $\pm 10.0\%$	E14 = Lead (Pb)-free bulk E31 = Lead (Pb)-free four layer bulk E01 = Lead (Pb)-free skin pack  B14 = Tin/lead bulk B31 = Tin/lead four layer bulk J01 = Tin/lead skin pack	(Dash Number) (up to 3 digits) From 1 - 999 as applicable

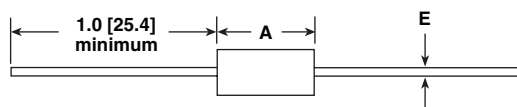
Historical Part Number Example: CPW-5-3 15  $\Omega$  5% B31 (will continue to be accepted)

CPW-5-3	15 $\Omega$	5%	B31
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

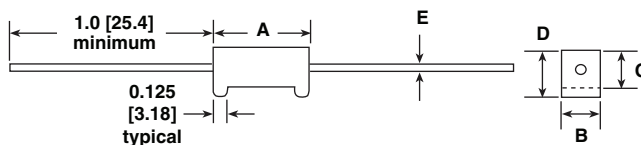
\* Pb containing terminations are not RoHS compliant, exemptions may apply

## DIMENSIONS in inches [millimeters]

CPWxx



CPWxx...3



GLOBAL MODEL	DIMENSIONS in inches [millimeters]				
	A <sup>(1)</sup> ± 0.031 [0.794]	B ± 0.031 [0.794]	C ± 0.031 [0.794]	D ± 0.031 [0.794]	E ± 0.001 [0.025]
CPW02	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	-	0.032 [0.813]
CPW02...3	0.688 [17.46]	0.250 [6.35]	0.250 [6.35]	0.313 [7.94]	0.032 [0.813]
CPW03	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	-	0.032 [0.813]
CPW03...3	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	0.375 [9.52]	0.032 [0.813]
CPW05	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.032 [0.813]
CPW05...3	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.406 [10.32]	0.032 [0.813]
CPW07	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.032 [0.813]
CPW07...3	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.032 [0.813]
CPW10	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.032 [0.813]
CPW10...3	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.032 [0.813]
CPW15	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.032 [0.813]
CPW15...3	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.032 [0.813]
CPW20	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	-	0.032 [0.813]
CPW20...3	2.500 [63.50]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.032 [0.813]

### 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

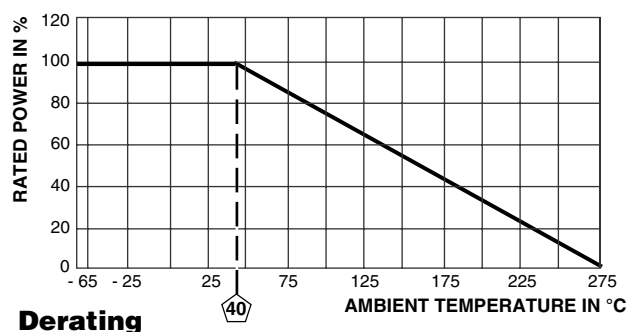
**Core:** Ceramic

**End Caps:** Tin plated steel

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

**Terminals:** Tinned Copperweld®

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



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA RS-344)
Thermal Shock	- 55 °C to + 275 °C, 5 cycles, 30 min dwell time	± (2.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 s	± (2.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V <sub>rms</sub> for 1 min	± (0.1 % + 0.05 Ω) ΔR
Low Temperature Storage	- 65 °C, full rated working voltage for 45 min	± (2.0 % + 0.05 Ω) ΔR
Bias Humidity	75 °C, 90 % - 100 % RH, 240 h	± (2.0 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, + 40 °C, 1.5 h "ON", 0.5 h "OFF"	± (3.0 % + 0.05 Ω) ΔR
Terminal Strength	5 to 10 s 10 pound pull test, torsion test - 3 alternating directions, 360° each	± (1.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body	± (1.0 % + 0.05 Ω) ΔR



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