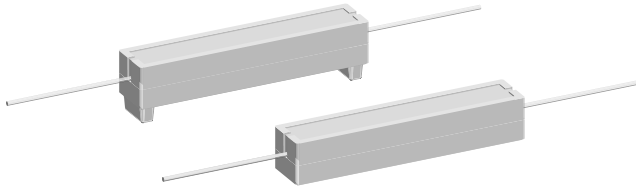




## Wirewound Resistors, Commercial Power, Axial Lead, Low Value



### FEATURES

- High power to size ratio
- Low inductance, less than 5 nH
- Ceramic cases are available with circuit board stand-offs (designated with a -3 model ending)
- Superior surge capability
- Extremely low resistance values
- Complete welded construction
- 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\*  
Available

HALOGEN  
**FREE**  
Available

**GREEN**  
(5-2008)  
Available

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40^{\circ}\text{C}}$ W	RESISTANCE RANGE <sup>(1)</sup> $\Omega$	TOLERANCE $\pm$ %	WEIGHT (typical) g
CPL03	CPL-3	3	0.01 to 0.10	1, 2, 3, 5, 10	3.4
CPL03...3	CPL-3-3	3	0.01 to 0.10	1, 2, 3, 5, 10	3.6
CPL05	CPL-5	5	0.01 to 0.10	1, 2, 3, 5, 10	4.8
CPL05...3	CPL-5-3	5	0.01 to 0.10	1, 2, 3, 5, 10	5.0
CPL07	CPL-7	7	0.01 to 0.10	1, 2, 3, 5, 10	6.8
CPL07...3	CPL-7-3	7	0.01 to 0.10	1, 2, 3, 5, 10	7.0
CPL10	CPL-10	10	0.01 to 0.10	1, 2, 3, 5, 10	9.5
CPL10...3	CPL-10-3	10	0.01 to 0.10	1, 2, 3, 5, 10	9.9
CPL15	CPL-15	15	0.01 to 0.10	1, 2, 3, 5, 10	16.8
CPL15...3	CPL-15-3	15	0.01 to 0.10	1, 2, 3, 5, 10	17.4

#### Note

<sup>(1)</sup> Resistance is measured 3/8" [9.52 mm] from resistor body

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPL RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	$\pm$ 300
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +275
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	$V_{AC}$	1000

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: CPL05R05000JB143

C P L 0 5 R 0 5 0 0 0 J B 1 4 3

GLOBAL MODEL
CPL03
CPL05
CPL07
CPL10
CPL15

VALUE
R = decimal
R1000 = 0.10 $\Omega$

TOLERANCE
F = $\pm$ 1.0 %
G = $\pm$ 2.0 %
H = $\pm$ 3.0 %
J = $\pm$ 5.0 %
K = $\pm$ 10.0 %

PACKAGING
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

SPECIAL
(dash number) (up to 3 digits) from 1 to 999 as applicable

Historical Part Numbering Example: CPL-5-3 0.05  $\Omega$  5 % B14

CPL-5-3
HISTORICAL MODEL

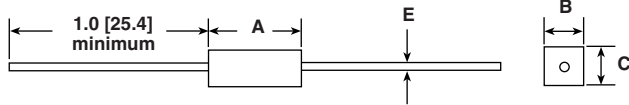
0.05 $\Omega$
RESISTANCE VALUE

5 %
TOLERANCE CODE

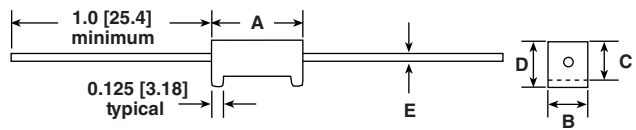
B14
PACKAGING

**DIMENSIONS** in inches [millimeters]

CPLxx



CPLxx...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]
CPL03	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	-	0.036 [0.914]
CPL03...3	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	0.375 [9.52]	0.036 [0.914]
CPL05	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]
CPL05...3	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.406 [10.32]	0.036 [0.914]
CPL07	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]
CPL07...3	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]
CPL10	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]
CPL10...3	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	0.469 [11.91]	0.036 [0.914]
CPL15	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]
CPL15...3	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	0.625 [15.87]	0.036 [0.914]

**Note**

<sup>(1)</sup> Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side

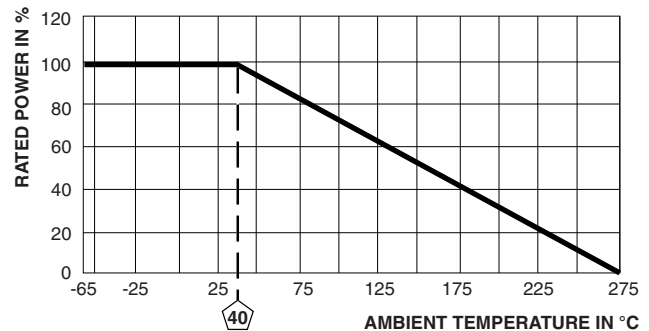
**MATERIAL SPECIFICATIONS**

**Element:** self-supporting copper-nickel alloy or nickel-chrome alloy, depending on resistance range

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

**Terminals:** tinned copper

**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
Bias 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"	± (5.0 % + 0.05 Ω) ΔR
Terminal Strength	5 s 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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