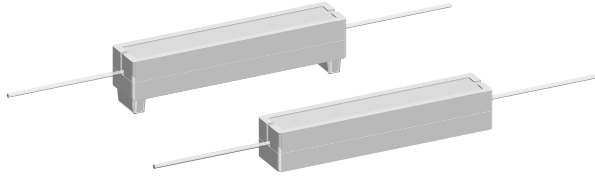


## Wirewound Resistors, Commercial Power, Axial Lead, Low Value



### FEATURES

- High power to size ratio
- Low inductance
- 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



**RoHS\***  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

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

\*\* Resistance is measured 3/8" [9.52 mm] from resistor body.

\*\*\*  $\pm 1\%$  and  $\pm 3\%$  available.

### TECHNICAL SPECIFICATIONS

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

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPL05R0500JB143 (preferred part numbering format)

|                                           |   |   |   |                               |   |                                                                        |   |   |                                                                                                                                                                                                 |   |   |   |                                                                 |   |  |  |
|-------------------------------------------|---|---|---|-------------------------------|---|------------------------------------------------------------------------|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|-----------------------------------------------------------------|---|--|--|
| C                                         | P | L | 0 | 5                             | R | 0                                                                      | 5 | 0 | 0                                                                                                                                                                                               | J | B | 1 | 4                                                               | 3 |  |  |
| GLOBAL MODEL                              |   |   |   | VALUE                         |   | TOLERANCE                                                              |   |   | PACKAGING                                                                                                                                                                                       |   |   |   | SPECIAL                                                         |   |  |  |
| CPL03<br>CPL05<br>CPL07<br>CPL10<br>CPL15 |   |   |   | R = Decimal<br>R1000 = 0.10 Ω |   | F = ± 1.0 %<br>G = ± 2.0 %<br>H = ± 3.0 %<br>J = ± 5.0 %<br>K = ± 10 % |   |   | E14 = Lead (Pb)-free bulk<br>E31 = Lead (Pb)-free<br>four layer bulk<br>E01 = Lead (Pb)-free skin pack<br><br>B14 = Tin/lead bulk<br>B31 = Tin/lead four layer bulk<br>J01 = Tin/lead skin pack |   |   |   | Dash Number)<br>(up to 3 digits)<br>From 1-999 as<br>applicable |   |  |  |

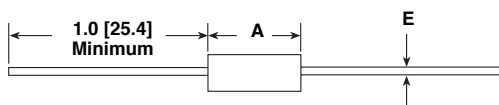
Historical Part Number example: CPL-5-3 0.05  $\Omega$  5% B14 (will continue to be accepted)

|                  |                  |                |           |
|------------------|------------------|----------------|-----------|
| CPL-5-3          | 0.05 $\Omega$    | 5%             | B14       |
| HISTORICAL MODEL | RESISTANCE VALUE | TOLERANCE CODE | PACKAGING |

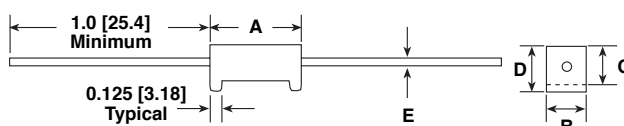
\* Pb containing terminations are not RoHS compliant, exemptions may apply

## DIMENSIONS

CPLxx



CPLxx...3



| GLOBAL<br>MODEL | DIMENSIONS in inches [millimeters] |                      |                      |                      |                      |
|-----------------|------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                 | ± 0.031 [0.794]<br>A               | ± 0.031 [0.794]<br>B | ± 0.031 [0.794]<br>C | ± 0.031 [0.794]<br>D | ± 0.001 [0.025]<br>E |
| CPL03           | 0.875 [22.22]                      | 0.313 [7.94]         | 0.313 [7.94]         | —                    | 0.032 [0.813]        |
| CPL03...3       | 0.875 [22.22]                      | 0.313 [7.94]         | 0.313 [7.94]         | 0.375 [9.52]         | 0.032 [0.813]        |
| CPL05           | 0.875 [22.22]                      | 0.375 [9.52]         | 0.344 [8.73]         | —                    | 0.032 [0.813]        |
| CPL05...3       | 0.875 [22.22]                      | 0.375 [9.52]         | 0.344 [8.73]         | 0.406 [10.32]        | 0.032 [0.813]        |
| CPL07           | 1.391 [35.32]                      | 0.375 [9.52]         | 0.344 [8.73]         | —                    | 0.032 [0.813]        |
| CPL07...3       | 1.391 [35.32]                      | 0.375 [9.52]         | 0.344 [8.73]         | 0.469 [11.91]        | 0.032 [0.813]        |
| CPL10           | 1.875 [47.62]                      | 0.375 [9.52]         | 0.344 [8.73]         | —                    | 0.032 [0.813]        |
| CPL10...3       | 1.875 [47.62]                      | 0.375 [9.52]         | 0.344 [8.73]         | 0.469 [11.91]        | 0.032 [0.813]        |
| CPL15           | 1.875 [47.62]                      | 0.500 [12.70]        | 0.500 [12.70]        | —                    | 0.032 [0.813]        |
| CPL15...3       | 1.875 [47.62]                      | 0.500 [12.70]        | 0.500 [12.70]        | 0.625 [15.87]        | 0.032 [0.813]        |

\*Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side.

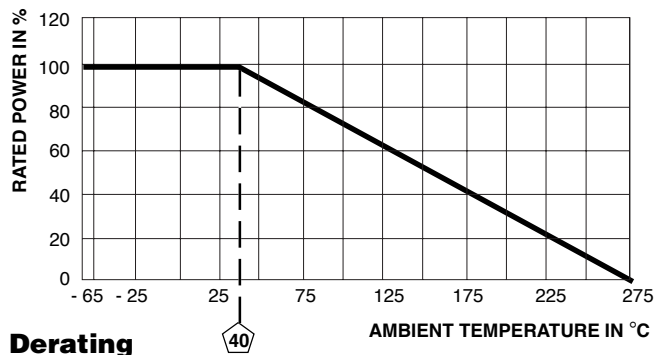
## MATERIAL SPECIFICATIONS

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

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

**Terminals:** Tinned copper

**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 minute dwell time                                   | ± (5.0 % + 0.05 Ω) ΔR    |
| Short Time Overload             | 5 x rated power for 5 seconds                                                         | ± (4.0 % + 0.05 Ω) ΔR    |
| Dielectric Withstanding Voltage | 1000 V <sub>rms</sub> for one minute                                                  | ± (2.0 % + 0.05 Ω) ΔR    |
| Low Temperature Operation       | - 65 °C, full rated working voltage for 45 minutes                                    | ± (3.0 % + 0.05 Ω) ΔR    |
| Bias Humidity                   | 75 °C, 90 % - 100 % RH, 240 hours                                                     | ± (5.0 % + 0.05 Ω) ΔR    |
| Load Life                       | 1000 hours at rated power, + 40 °C, 1.5 hours "ON", 0.5 hours "OFF"                   | ± (5.0 % + 0.05 Ω) ΔR    |
| Terminal Strength               | 5 to 10 second 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 seconds in molten solder at 1/8" to 3/16" from body             | ± (1.0 % + 0.05 Ω) ΔR    |



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