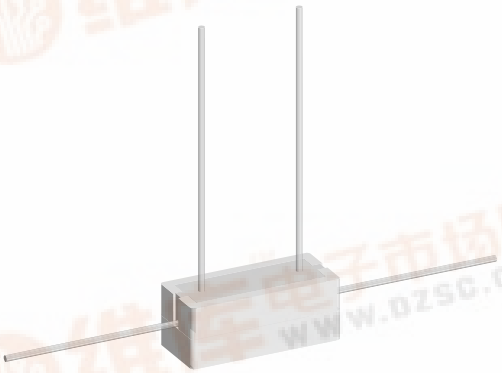
Wirewound Resistors, Commercial Power, Four Terminal, Low Value



FEATURES

- Low inductance
- Extremely low resistance values
- Current sensing
- Low temperature coefficients
- 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
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Compliant to RoHS Directive 2002/95/EC

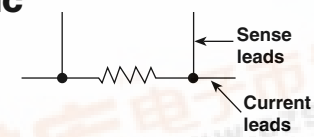
Pb-free Available

e3

RoHS* COMPLIANT

GREEN (5-2008)** Available

SCHEMATIC



STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\ °C}$ W	RESISTANCE RANGE Ω ± 5 % standard, ± 3 % available	WEIGHT (typical) g
CPSL03...5	CPSL-3-5	3	0.01 to 0.10	4.0
CPSL03...3	CPSL-3-3	3	0.01 to 0.10	4.2
CPSL05...5	CPSL-5-5	5	0.01 to 0.10	5.2
CPSL05...3	CPSL-5-3	5	0.01 to 0.10	5.4
CPSL07...5	CPSL-7-5	7	0.01 to 0.10	7.6
CPSL10...5	CPSL-10-5	10	0.01 to 0.10	10.2
CPSL15...5	CPSL-15-5	15	0.01 to 0.10	18.9

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPSL RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 100 maximum
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_{AC}	1000

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPSL05R0500JB143 (preferred part number format)

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

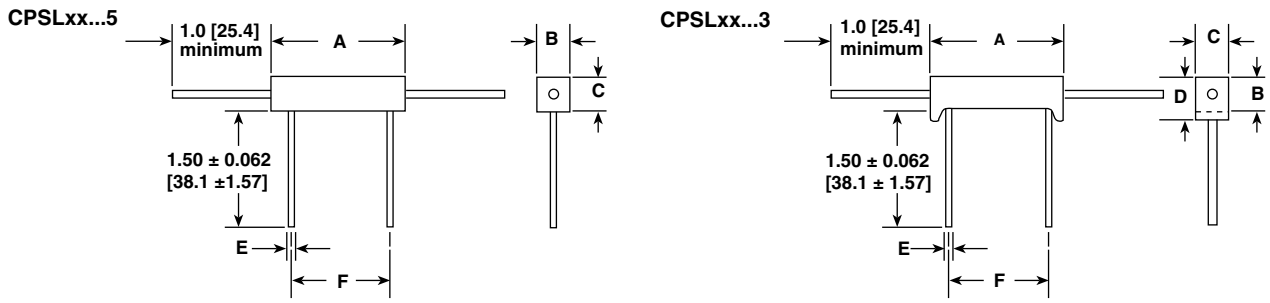
GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
CPSL03 **CPSL05** **CPSL07** **CPSL10** **CPSL15**	**R** = Decimal **R1000** = 0.10 Ω	**F** = ± 1.0 % **G** = ± 2.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10.0 %	**E14** = Lead (Pb)-free bulk **E31** = Lead (Pb)-free four layer bulk **B14** = Tin/lead bulk **B31** = Tin/lead four layer bulk	(Dash Number) (up to 3 digits) From **1 to 999** as applicable

Historical Part Number Example: CPSL-5-3 0.05 Ω 5 % B14 (will continue to be accepted)

CPSL-5-3	0.05 Ω	5 %	B14
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

* Pb containing terminations are RoHS compliant, exemptions may apply
** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

DIMENSIONS in inches [millimeters]



GLOBAL MODEL	DIMENSIONS in inches [millimeters]					
	A (1) ± 0.031 [0.794]	B ± 0.031 [0.794]	C ± 0.031 [0.794]	D ± 0.031 [0.794]	E ± 0.001 [0.025]	F ± 0.063 [1.59]
CPSL03...5	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	-	0.036 [0.914]	0.563 [14.30]
CPSL03...3	0.875 [22.22]	0.313 [7.94]	0.313 [7.94]	0.375 [9.52]	0.036 [0.914]	0.563 [14.30]
CPSL05...5	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	0.563 [14.30]
CPSL05...3	0.875 [22.22]	0.375 [9.52]	0.344 [8.73]	0.438 [11.11]	0.036 [0.914]	0.563 [14.30]
CPSL07...5	1.391 [35.32]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.000 [25.40]
CPSL10...5	1.875 [47.62]	0.375 [9.52]	0.344 [8.73]	-	0.036 [0.914]	1.375 [34.93]
CPSL15...5	1.875 [47.62]	0.500 [12.70]	0.500 [12.70]	-	0.036 [0.914]	1.375 [34.93]

Note
(1) Potting compound may extend outside of ceramic case up to 0.060 [1.52] maximum per side.

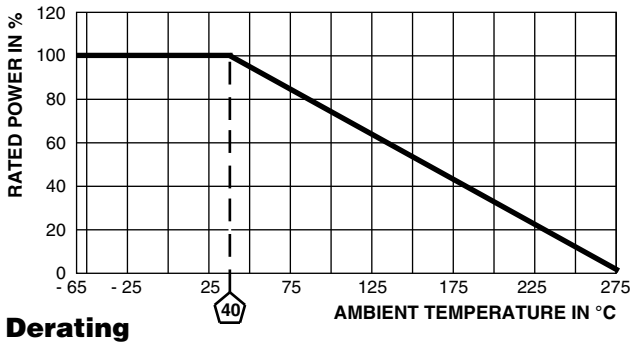
MATERIAL SPECIFICATIONS

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



Derating

PERFORMANCE		
TEST	**CONDITIONS OF TEST**	**TEST LIMITS**
Thermal Shock	- 55 °C to + 275 °C, 5 cycles, 30 min dwell time	± (5.0 % + 0.05 Ω) Δ*R*
Short Time Overload	5 x rated power for 5 s	± (4.0 % + 0.05 Ω) Δ*R*
Dielectric Withstanding Voltage	1000 V_{rms} for 1 min	± (2.0 % + 0.05 Ω) Δ*R*
Low Temperature Operation	- 65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) Δ*R*
Bias Humidity	75 °C, 90 % to 100 % RH, 240 h	± (5.0 % + 0.05 Ω) Δ*R*
Load Life	1000 h at rated power, + 40 °C, 1.5 h "ON", 0.5 h "OFF"	± (5.0 % + 0.05 Ω) Δ*R*
Terminal Strength	5 to 10 s 10 pound pull test, torsion test - 3 alternating directions, 360° each	± (1.0 % + 0.05 Ω) Δ*R*
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) Δ*R*

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