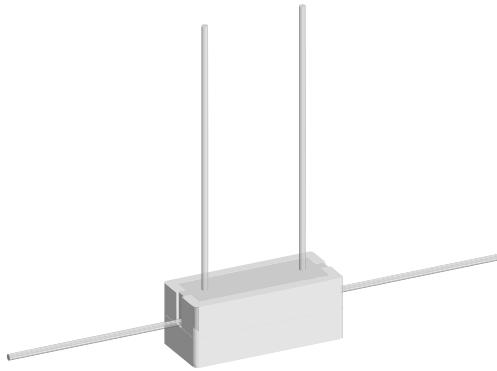


Wirewound Resistors, Commercial Power, Four Terminal, Low Value



FEATURES

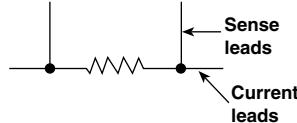
- Low inductance
- Extremely low resistance values
- Current sensing
- Low temperature coefficients
- High power to size ratio
- Ceramic cases are available with circuit board stand-offs (designated with a -3 model ending)
- Superior surge capability
- Complete welded construction
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Compliant to RoHS Directive 2002/95/EC


RoHS*
COMPLIANT

GREEN
(S-2008) **
Available

Notes

- * Pb containing terminations are not RoHS compliant, exemptions may apply
- ** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

SCHEMATIC

STANDARD ELECTRICAL SPECIFICATIONS

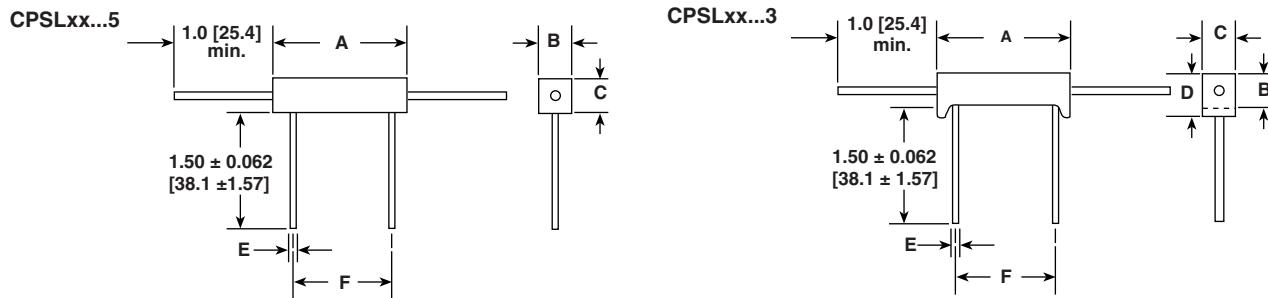
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\text{ °C}}$ W	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	WEIGHT (typical) g
CPSL03...5	CPSL-3-5	3	0.01 to 0.10	1, 3, 5, 10	4.0
CPSL03...3	CPSL-3-3	3	0.01 to 0.10	1, 3, 5, 10	4.2
CPSL05...5	CPSL-5-5	5	0.01 to 0.10	1, 3, 5, 10	5.2
CPSL05...3	CPSL-5-3	5	0.01 to 0.10	1, 3, 5, 10	5.4
CPSL07...5	CPSL-7-5	7	0.01 to 0.10	1, 3, 5, 10	7.6
CPSL10...5	CPSL-10-5	10	0.01 to 0.10	1, 3, 5, 10	10.2
CPSL15...5	CPSL-15-5	15	0.01 to 0.10	1, 3, 5, 10	18.9

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPSL RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	± 100 maximum
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	$^{\circ}\text{C}$	- 65 to + 275
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	V _{AC}	1000

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: CPSL05R0500JB143											
C	P	S	L	0	5	R	0	5	0	0	J
GLOBAL MODEL			VALUE			TOLERANCE			PACKAGING		
CPSL03			R = Decimal			F = $\pm 1.0\%$			E14 = Lead (Pb)-free bulk		
CPSL05			R1000 = 0.10 Ω			G = $\pm 2.0\%$			E31 = Lead (Pb)-free four layer bulk		
CPSL07			H = $\pm 3.0\%$			B14 = Tin/lead bulk			B31 = Tin/lead four layer bulk		
CPSL10			J = $\pm 5.0\%$								
CPSL15			K = $\pm 10.0\%$								
Historical Part Numbering example: CPSL-5-3 0.05 Ω 5 % B14											
CPSL-5-3			0.05 Ω			5 %			B14		
HISTORICAL MODEL			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING		

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.

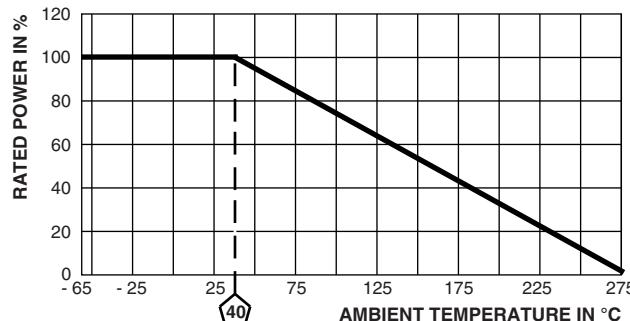
MATERIAL SPECIFICATIONS

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) ΔR
Short Time Overload	5 x rated power for 5 s	± (4.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V _{RMS} 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

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Vishay](#):

[CPSL05R0200JE143](#) [CPSL03R0800HE145](#) [CPSL10R0250JE145](#) [CPSL03R0100JE143](#)