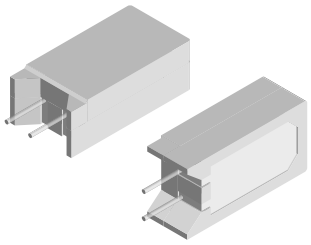
Vishay Dale

Wirewound Resistors, Commercial Power, Vertical Mount



FEATURES

- Space saving
- Direct mounting on printed circuit board
- Meets or exceeds requirements of EIA-Standard RS-344
- High power to size ratio
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fire-proof package

Pb-free Available

RoHS* COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\,°C}$ W	TOLERANCE ± %	RESISTANCE RANGE Ω	WEIGHT (Typical) g
CPCL02	CPCL-2	2	5, 10	0.01 - 0.10	3.5
CPCC02	CPCC-2	2	5, 10	0.1 - 500	3.5
CPCP02	CPCP-2	2	1, 5	0.1 - 4 k	3.5
CPCF02	CPCF-2	2	1, 5, 10	501 - 150 k	3.5
CPCL03	CPCL-3	3	5, 10	0.01 - 0.10	5.5
CPCC03	CPCC-3	3	5, 10	0.1 - 800	5.5
CPCP03	CPCP-3	3	1,5	0.1 - 5 k	5.5
CPCF03	CPCF-3	3	1, 5, 10	801 - 150 k	5.5
CPCL05	CPCL-5	5	5, 10	0.01 - 0.10	6.9
CPCC05	CPCC-5	5	5, 10	0.1 - 800	6.9
CPCP05	CPCP-5	5	1, 5	0.1 - 5 k	6.9
CPCF05	CPCF-5	5	1, 5, 10	801 - 150 k	6.9
CPCP07	CPCP-7	7	3, 5, 10	0.1 - 430	9.2
CPCL10	CPCL-10	10	5, 10	0.01 - 0.10	14.3
CPCC10	CPCC-10	10	5, 10	0.1 - 1.5 k	14.3
CPCP10	CPCP-10	10	1, 5	0.1 - 8 k	14.3

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPCLxx	CPCCxx	CPCPxx	CPCFxx
Temperature Coefficient	ppm/°C	0.01 Ω - 0.049 Ω = ± 400 0.05 Ω - 0.1 Ω = ± 100	0.1 Ω - 0.99 Ω = ± 600 1.0 Ω and above = ± 300	0.1 Ω - 0.99 Ω = ± 90 1.0 Ω - 9.9 Ω = ± 50 10 Ω and above = ± 20	± 50 all values
Short Time Overload	-	5 x rated power for 5 seconds			
Maximum Working Voltage	V	$(P \times R)^{1/2}$			
Operating Temperature Range	°C	- 65/+ 275			- 65/+ 225
Terminal Strength	lb	10 minimum			
Dielectric Withstanding Voltage	V_{AC}	1000			

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPCC0515R00JB32 (preferred part numbering format)

C	P	C	C	0	5	1	5	R	0	0	J	B	3	2			

GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
(See Standard Electrical Specifications Global Model column for options)	**R** = Decimal **K** = Thousand **R1500** = 0.15 Ω **1K500** = 1500 Ω	**F** = ± 1.0 % **H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10 %	**E32** = Lead (Pb)-free two layer bulk **E01** = Lead (Pb)-free skin pack **B32** = Tin/lead two layer bulk **J01** = Tin/lead skin pack	Dash Number) (up to 3 digits) From **1-999** as applicable

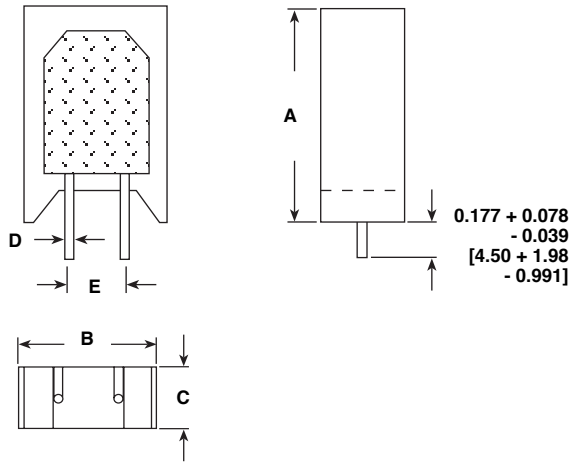
Historical Part Number example: CPCC-5 15 Ω 5 % B32 (will continue to be accepted)

CPCC-5	15 Ω	5 %	B32
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

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

For technical questions, contact ww2aresistors@vishay.com

DIMENSIONS



GLOBAL MODEL	DIMENSIONS in inches [millimeters] A ± 0.031 [0.794]	B ± 0.031 [0.794]	C + 0.043 [1.09] -0.012 [0.305]	D ± 0.005 [0.127]	E ± 0.040 [1.02]
CPCL02 CPCC02 CPCP02 CPCF02	0.807 [20.50]	0.433 [11.00]	0.276 [7.01]	0.032 [0.813]	0.197 [5.00]
CPCL03 CPCC03 CPCP03 CPCF03	0.984 [24.99]	0.472 [11.99]	0.315 [8.00]	0.032 [0.813]	0.197 [5.00]
CPCL05 CPCC05 CPCP05 CPCF05	1.003 [25.48]	0.512 [13.00]	0.354 [8.99]	0.032 [0.813]	0.197 [5.00]
CPCP07	1.535 ± 0.059 [39.00 ± 1.50]	0.512 ± 0.043 [13.00 ± 1.10]	0.354 ± 0.043 [9.00 ± 1.10]	0.032 ± 0.005 [0.813 ± 0.127]	0.197 + 0.079/-0.039 [5.00 + 2.0/- 1.0]
CPCL10 CPCP10	1.372 [34.85]	0.633 [16.08]	0.485 [12.32]	0.040 [1.02]	0.290 [7.37]
CPCC10				0.036 [0.914]	

MATERIAL SPECIFICATIONS

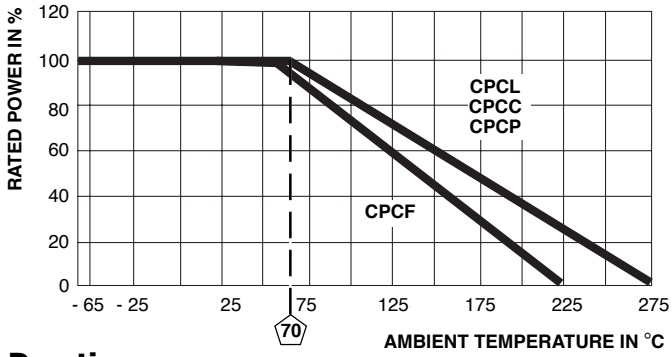
Part Marking: DALE, Model, Wattage, Value, Tolerance, Date Code

CPCL: 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

CPCC: Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core: Woven fiberglass
Body: Steatite ceramic case with inorganic potting compound
End Caps: Tin plated steel
Terminals: Tinned copper

CPCP: Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core: Ceramic
Body: Steatite ceramic case with inorganic potting compound
End Caps: Stainless steel (CPCP07 is tin plated CRS)
Terminals: Tinned Copperweld® (CPCP07 is tin plated copper)

CPCF: Element: Metal film - nickel-chrome alloy
Core: Alumina ceramic
Body: Steatite ceramic case with inorganic potting compound
End Caps: Brass alloy
Terminals: Solder-coated copper



Derating

PERFORMANCE			
TEST	CONDITIONS OF TEST	CPCP TEST LIMITS	CPCC, CPCL, CPCF TEST LIMITS
Thermal Shock	- 55 °C to + 275 °C, 5 cycles, 30 minute dwell time	± (2.0 % + 0.05 Ω) ΔR	± (5.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 seconds	± (2.0 % + 0.05 Ω) ΔR	± (4.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V_{rms} for one minute	± (0.1 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Low Temperature Operation	- 65 °C, full rated working voltage for 45 minutes	± (2.0 % + 0.05 Ω) ΔR	± (3.0 % + 0.05 Ω) ΔR
Bias Humidity	75 °C, 90 % - 100 % RH, 240 hours	± (2.0 % + 0.05 Ω) ΔR	± (5.0 % + 0.05 Ω) ΔR
Load Life	1000 hours at rated power, + 70 °C, 1.5 hours "ON", 0.5 hours "OFF"	± (5.0 % + 0.05 Ω) ΔR	± (5.0 % + 0.05 Ω) ΔR
Terminal Strength	5 to 10 second 10 pound pull test	± (1.0 % + 0.05 Ω) ΔR	± (1.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 seconds in molten solder up to body	± (1.0 % + 0.05 Ω) ΔR	± (1.0 % + 0.05 Ω) ΔR

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