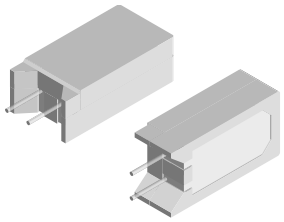
Wirewound/Metal Film Resistors, Commercial Power, Vertical Mount



FEATURES

- Board space saving due to vertical design
- 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 fireproof package
- Compliant to RoHS Directive 2002/95/EC

Pb-free Available

e3

RoHS* COMPLIANT

GREEN (5-2008)** Available

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	WEIGHT (typical) g
CPCL02	CPCL-2	2	0.01 to 0.10	5, 10	3.5
CPCC02	CPCC-2	2	0.1 to 500	5, 10	3.5
CPCP02	CPCP-2	2	0.1 to 4K	1, 5	3.5
CPCF02	CPCF-2	2	501 to 150K	1, 5, 10	3.5
CPCL03	CPCL-3	3	0.01 to 0.10	5, 10	5.5
CPCC03	CPCC-3	3	0.1 to 800	5, 10	5.5
CPCP03	CPCP-3	3	0.1 to 5K	1, 5	5.5
CPCF03	CPCF-3	3	801 to 150K	1, 5, 10	5.5
CPCL05	CPCL-5	5	0.01 to 0.10	5, 10	6.9
CPCC05	CPCC-5	5	0.1 to 800	5, 10	6.9
CPCP05	CPCP-5	5	0.1 to 5K	1, 5	6.9
CPCF05	CPCF-5	5	801 to 150K	1, 5, 10	6.9
CPCC07/CPCF07 (1)	CPCC07/CPCF07	7	0.1 to 50K	5, 10	9.2
CPCL10	CPCL-10	10	0.01 to 0.10	5, 10	14.3
CPCC10	CPCC-10	10	0.1 to 1.5K	5, 10	14.3
CPCP10	CPCP-10	10	0.1 to 8K	1, 5	14.3

Notes

- Non-inductively wound types are available on the CPCP series signified by a 1 in the special character on part number such as CPCP0510R00FB321. Max. resistance value will be ½ of the standard CPCP.

(1) CPCx07 is only available as CPCC or CPCF High Volume style which is noted by using E66 package code and can be found on datasheet www.vishay.com/doc?30116.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPCLxx	CPCCxx	CPCPxx	CPCFxx
Temperature Coefficient	ppm/°C	± 100 = 0.05 Ω to 0.1 Ω, ± 400 = 0.01 Ω to 0.049 Ω	± 300 = 1.0 Ω and above, ± 600 = 0.1 Ω to 0.99 Ω, ± 400 for CPCC07	± 20 = 10 Ω and above, ± 50 = 1.0 Ω to 9.9 Ω, ± 90 = 0.1 Ω to 0.99 Ω	± 50 all values, ± 400 for CPCF07
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			- 65 to + 225
Terminal Strength	lb	10 minimum			
Dielectric Withstanding Voltage	V_{AC}	1000			

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: CPCC0515R00JB32

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** = ± 10.0 %	**E32** = Lead (Pb)-free two layer bulk **E01** = Lead (Pb)-free skin pack **E66** = Lead (Pb)-free bulk (CPCx07 only) **B32** = Tin/lead two layer bulk **J01** = Tin/lead skin pack	(Dash number) (up to 3 digits) From **1 to 999** as applicable

Historical Part Numbering example: CPCC-5 15 Ω 5 % B32

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

* Pb containing terminations are not 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 ± 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]
CPCC07, CPCF07	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

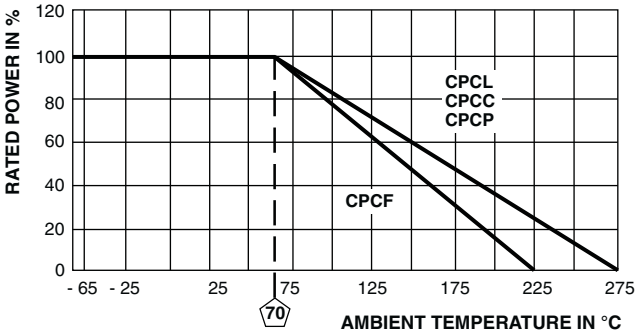
CPCL: Element: Self-supporting copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Body: Steatite ceramic case with inorganic potting compound
Terminals: Tinned copper

CPCC: Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core: Woven fiberglass (CPCC07 is alumina ceramic)
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
Terminals: Tinned Copperweld®

CPCF: Element: Metal film - nickel-chrome alloy (CPCF07 is nickel oxide)
Core: Alumina ceramic
Body: Steatite ceramic case with inorganic potting compound
End Caps: Brass alloy
Terminals: Solder-coated copper (CPCF07 is tinned copper)

DERATING



Note
- CPCC07 and CPCF07 deratings begin at 40 °C in lieu of 70 °C

PERFORMANCE			
TEST	CONDITIONS OF TEST	CPCP TEST LIMITS	CPCC, CPCL, CPCF TEST LIMITS
Thermal Shock	- 55 °C to + 275 °C (+ 225 °C for CPCF), 5 cycles, 30 min dwell time	± (2.0 % + 0.05 Ω) ΔR	± (5.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 s	± (2.0 % + 0.05 Ω) ΔR	± (4.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V_{RMS} for 1 min	± (0.1 % + 0.05 Ω) ΔR	± (2.0 % + 0.05 Ω) ΔR
Low Temperature Storage	- 65 °C, full rated working voltage for 45 min	± (2.0 % + 0.05 Ω) ΔR	± (3.0 % + 0.05 Ω) ΔR
Bias Humidity	75 °C, 90 % to 100 % RH, 240 h	± (2.0 % + 0.05 Ω) ΔR	± (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	± (5.0 % + 0.05 Ω) ΔR
Terminal Strength	5 s to 10 s 10 pound pull test	± (1.0 % + 0.05 Ω) ΔR	± (1.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder up to body	± (1.0 % + 0.05 Ω) ΔR	± (4.0 % + 0.05 Ω) ΔR

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