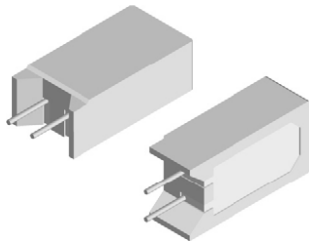
Wirewound/Metal Oxide Resistors, Commercial Power, Vertical Mount



FEATURES

- Space saving
- Direct mounting on printed circuit board
- High power to size ratio
- Special cement potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω WIREWOUND	RESISTANCE RANGE Ω METAL OXIDE	TOLERANCE ± %	WEIGHT (typical) g
CPCC02	2	0.1 to 100	n/a	5, 10	4.7
CPCF02	2	n/a	101 to 50K	5, 10	4.7
CPCC03	3	0.1 to 100	n/a	5, 10	5.5
CPCF03	3	n/a	101 to 50K	5, 10	5.5
CPCC05	5	0.1 to 100	n/a	5, 10	6.9
CPCF05	5	n/a	101 to 50K	5, 10	6.9
CPCC07	7	0.1 to 100	n/a	5, 10	9.2
CPCF07	7	n/a	101 to 50K	5, 10	9.2
CPCC10	10	0.1 to 100	n/a	5, 10	14.3
CPCC1A	10	0.1 to 100	n/a	5, 10	13.2

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPCC, CPCF HIGH VOLUME RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 400
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 for wirewound, -65 to +225 for metal oxide
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	V_{AC}	1000

GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: CPCC0515R00JE66

C	P	C	C	0	5	1	5	R	0	0	J	E	6	6			

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	**J** = ± 5.0 % **K** = ± 10.0 %	**E66** = lead (Pb)-free bulk pack	(Dash number) (Up to 3 digits) From **1 to 999** as applicable

For technical questions, contact: ww2aresistors@vishay.com

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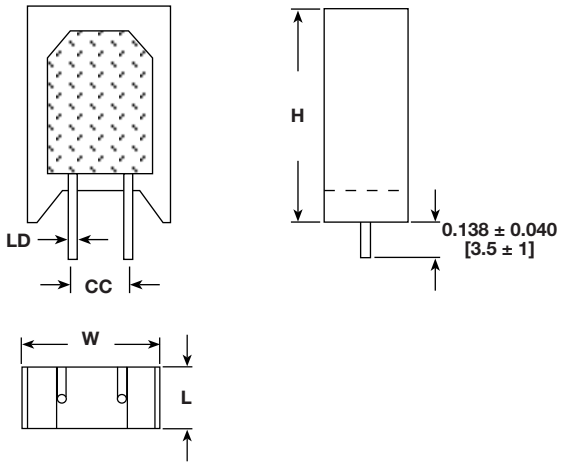
DIMENSIONS in inches [millimeters]



GLOBAL MODEL	DIMENSIONS in inches [millimeters]				
	H ± 0.060 [1.5]	W ± 0.040 [1.0]	L ± 0.040 [1.0]	LD ± 0.002 [0.05]	CC + 0.08 / - 0.04 [+ 2 / - 1]
CPCC02	0.787 [20]	0.433 [11]	0.138 [3.5]	0.031 [0.8]	0.197 [5]
CPCF02	0.787 [20]	0.433 [11]	0.138 [3.5]	0.031 [0.8]	0.197 [5]
CPCC03	0.984 [25]	0.472 [12]	0.315 [8]	0.031 [0.8]	0.197 [5]
CPCF03	0.984 [25]	0.472 [12]	0.315 [8]	0.031 [0.8]	0.197 [5]
CPCC05	0.984 [25]	0.512 [13]	0.354 [9]	0.031 [0.8]	0.197 [5]
CPCF05	0.984 [25]	0.512 [13]	0.354 [9]	0.031 [0.8]	0.197 [5]
CPCC07	1.535 [39]	0.512 [13]	0.354 [9]	0.031 [0.8]	0.197 [5]
CPCF07	1.535 [39]	0.512 [13]	0.354 [9]	0.031 [0.8]	0.197 [5]
CPCC10	1.378 [35]	0.630 [16]	0.472 [12]	0.031 [0.8]	0.295 [7.5]
CPCC1A	2.008 [51]	0.512 [13]	0.394 [10]	0.029 [0.75]	0.197 [5]

MATERIAL SPECIFICATIONS

Part Marking: Dale, model, wattage, value, tolerance, date code

CPCC

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

Core: alumina ceramic

Body: steatite ceramic case with cement potting compound

End Caps: tin plated steel

Terminals: tinned copper

CPCF

Element: nickel oxide

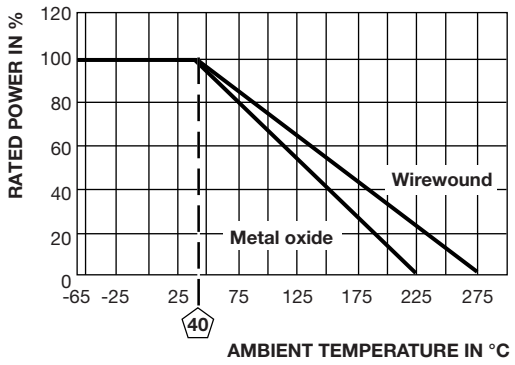
Core: alumina ceramic

Body: steatite ceramic case with inorganic potting compound

End Caps: brass alloy

Terminals: tinned copper

DERATING



PERFORMANCE

TEST	CONDITIONS OF TEST	CPCC, CPCF TEST LIMITS
Thermal Shock	-55 °C to +275 °C (+225 °C for metal oxide), 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, + 25 °C, 1.5 h “ON”, 0.5 h “OFF”	± (10.0 % + 0.05 Ω) ΔR
Terminal Strength	5 s to 10 s 10 pound pull test	± (2.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder up to body	± (4.0 % + 0.05 Ω) ΔR

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