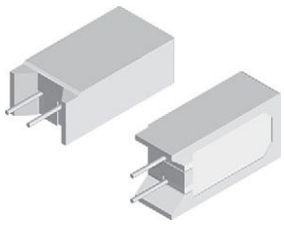
Wirewound / Metal Film Resistors, Commercial Power, Vertical Mount



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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

e3

RoHS* Available

HALOGEN FREE Available

GREEN (5-2008) Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	WEIGHT (typical) g
CPCP02	CPCP-2	2	0.1 to 4K	1, 5	3.5
CPCF02	CPCF-2	2	501 to 150K	1, 5, 10	3.5
CPCP03	CPCP-3	3	0.1 to 5K	1, 5	5.5
CPCF03	CPCF-3	3	801 to 150K	1, 5, 10	5.5
CPCP05	CPCP-5	5	0.1 to 5K	1, 5	6.9
CPCF05	CPCF-5	5	801 to 150K	1, 5, 10	6.9
CPCP10	CPCP-10	10	0.1 to 8K	1, 5	14.3

Note

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

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPCPxx	CPCFxx
Temperature Coefficient	ppm/°C	± 20 = 10 Ω and above, ± 50 = 1.0 Ω to 9.9 Ω, ± 90 = 0.1 Ω to 0.99 Ω	± 50 all values
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: CPCP0515R00JB32

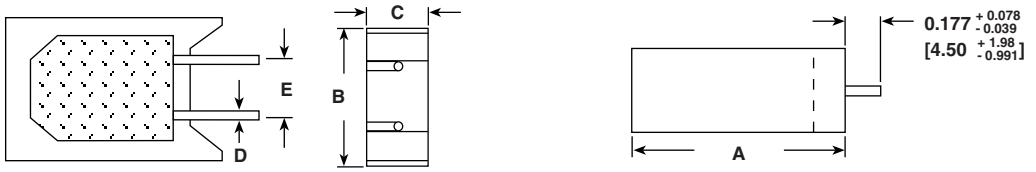
C	P	C	P	0	5	1	5	R	0	0	J	B	3	2			

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 **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: CPCP-5 15 Ω 5 % B32

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

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]**
CPCP02, CPCF02	0.807 [20.50]	0.433 [11.00]	0.276 [7.01]	0.032 [0.813]	0.197 [5.00]
CPCP03, CPCF03	0.984 [24.99]	0.472 [11.99]	0.315 [8.00]	0.032 [0.813]	0.197 [5.00]
CPCP05, CPCF05	1.003 [25.48]	0.512 [13.00]	0.354 [8.99]	0.032 [0.813]	0.197 [5.00]
CPCP10	1.372 [34.85]	0.633 [16.08]	0.485 [12.32]	0.040 [1.02]	0.290 [7.37]

MATERIAL SPECIFICATIONS

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

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

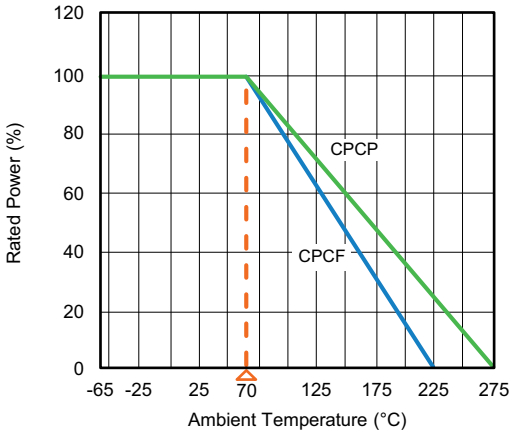
Core: Alumina ceramic

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**	**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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