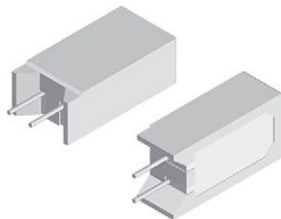




Wirewound / Metal Film Resistors, Commercial Power, Vertical Mount



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



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 $P_{70} \text{ } ^\circ\text{C W}$	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	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

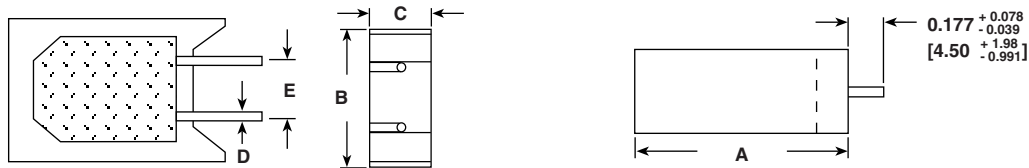
- Non-inductively wound types are available on the CPCP series signified by a 1 in the special character on part number such as CPCP0510R00FB321. Maximum resistance value will be $\frac{1}{2}$ of the standard CPCP

TECHNICAL SPECIFICATIONS			
PARAMETER	UNIT	CPCPxx	CPCFxx
Temperature Coefficient	ppm/ $^\circ\text{C}$	$\pm 20 = 10 \Omega$ and above, $\pm 50 = 1.0 \Omega$ to 9.9Ω , $\pm 90 = 0.1 \Omega$ to 0.99Ω	± 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	$^\circ\text{C}$	-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 (See Standard Electrical Specifications Global Model column for options)	VALUE R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1500 Ω	TOLERANCE F = ± 1.0 % H = ± 3.0 % J = ± 5.0 % K = ± 10.0 %	PACKAGING E32 = lead (Pb)-free two layer bulk E01 = lead (Pb)-free skin pack B32 = tin / lead two layer bulk J01 = tin / lead skin pack	SPECIAL (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]				
	± 0.031 [0.794] A	± 0.031 [0.794] B	+ 0.043 [1.09] - 0.012 [0.305] C	± 0.005 [0.127] D	± 0.040 [1.02] E
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

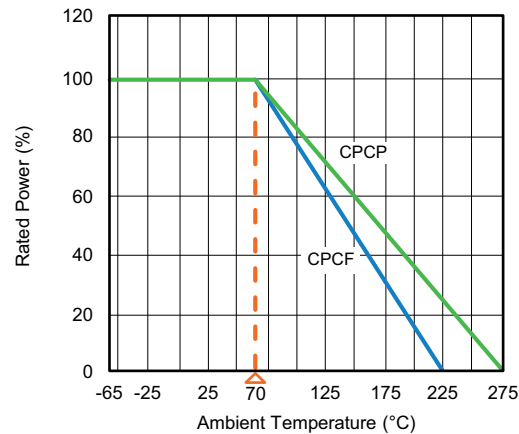
Body: steatite ceramic case with inorganic potting compound

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	$\pm (2.0 \% + 0.05 \Omega) \Delta R$	$\pm (5.0 \% + 0.05 \Omega) \Delta R$
Short Time Overload	5 x rated power for 5 s	$\pm (2.0 \% + 0.05 \Omega) \Delta R$	$\pm (4.0 \% + 0.05 \Omega) \Delta R$
Dielectric Withstanding Voltage	1000 V _{RMS} for 1 min	$\pm (0.1 \% + 0.05 \Omega) \Delta R$	$\pm (2.0 \% + 0.05 \Omega) \Delta R$
Low Temperature Storage	-65 °C, full rated working voltage for 45 min	$\pm (2.0 \% + 0.05 \Omega) \Delta R$	$\pm (3.0 \% + 0.05 \Omega) \Delta R$
Bias Humidity	75 °C, 90 % to 100 % RH, 240 h	$\pm (2.0 \% + 0.05 \Omega) \Delta R$	$\pm (5.0 \% + 0.05 \Omega) \Delta R$
Load Life	1000 h at rated power, + 40 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm (5.0 \% + 0.05 \Omega) \Delta R$	$\pm (5.0 \% + 0.05 \Omega) \Delta R$
Terminal Strength	5 s to 10 s 10 pound pull test	$\pm (1.0 \% + 0.05 \Omega) \Delta R$	$\pm (1.0 \% + 0.05 \Omega) \Delta R$
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder up to body	$\pm (1.0 \% + 0.05 \Omega) \Delta R$	$\pm (4.0 \% + 0.05 \Omega) \Delta R$



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