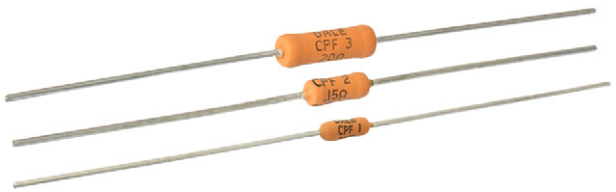
Metal Film Resistors, Axial, Industrial Power, Precision, Flameproof



FEATURES

- High power rating, small size
- Flameproof, high temperature silicone coating
- Special filming and coating processes
- Excellent high frequency characteristics
- Low noise
- Low voltage coefficient
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

e3 RoHS* 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	MAXIMUM WORKING VOLTAGE (1) V	POWER RATING $P_{70\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
CPF1	CPF-1	250	1	5 to 150K	0.1, 0.25, 0.5, 1	25
				5 to 150K	0.1, 0.25, 0.5, 1, 2, 5	50
				1 to 150K	0.5, 1, 2, 5	100
				0.5 to 150K	1, 2, 5	150
				0.5 to 150K	1	200
				0.2 to 150K	2, 5	200
				0.1 to 150K	2, 5	300
CPF2	CPF-2	350	2	5 to 150K	0.1, 0.25, 0.5, 1	25
				5 to 150K	0.1, 0.25, 0.5, 1, 2, 5	50
				1 to 150K	0.5, 1, 2, 5	100
				0.5 to 150K	1, 2, 5	150
				0.5 to 150K	1	200
				0.2 to 150K	2, 5	200
				0.1 to 150K	2, 5	300
CPF3	CPF-3	500	3	8 to 150K	0.1, 0.25, 0.5, 1	25
				8 to 150K	0.1, 0.25, 0.5, 1, 2, 5	50
				1 to 150K	0.5, 1, 2, 5	100
				1 to 150K	1, 2, 5	150
				1 to 150K	1	200
				0.2 to 150K	2, 5	200
				0.1 to 150K	2, 5	300

Note

(1) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less

For technical questions, contact: ff2aresistors@vishay.com

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GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPF1562R00FKR36 (preferred part numbering format)

C	P	F	1	5	6	2	R	0	0	F	K	R	3	6			

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING	SPECIAL
CPF1 **CPF2** **CPF3**	**R** = Ω **K** = kΩ **R10000** = 0.1 Ω **10R000** = 10 Ω **150K00** = 150 kΩ	**B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**E** = 25 ppm **H** = 50 ppm **K** = 100 ppm **L** = 150 ppm **N** = 200 ppm **M** = 300 ppm	**E14** = lead (Pb)-free, bulk **E36** = lead (Pb)-free, T/R (full) **EE6** = lead (Pb)-free, T/R (1000 pcs) **B14** = tin / lead, bulk **R36** = tin / lead, T/R (full) **RE6** = tin / lead, T/R (1000 pcs)	Blank = standard (dash number) (up to 3 digits) From **1 to 999** as applicable

Historical Part Number Example: CPF-15620FT-1 R36 (will continue to be accepted)

CPF-1	5620	F	T-1	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING

Note

- For additional information on packaging, refer to the Through-Hole Resistor Packaging document (www.vishay.com/doc?31544)

TEMPERATURE COEFFICIENT CODES

GLOBAL TC CODE	HISTORICAL TC CODE	TEMPERATURE COEFFICIENT
E	T-9	25 ppm/°C
H	T-2	50 ppm/°C
K	T-1	100 ppm/°C
L	T-0	150 ppm/°C
N	T-00	200 ppm/°C
M	M	300 ppm/°C

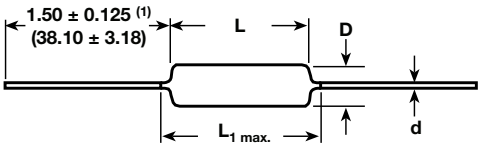
TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPF1	CPF2	CPF3
Rated Dissipation at 70 °C	W	1	2	3
Limiting Element Voltage (1)	V≅	250	350	500
Dielectric Withstanding Voltage	V_{eff}	500	700	800
Thermal Resistance	K/W	85	60	50
Insulation Resistance	Ω	10^{10}		
Category Temperature Range	°C	-65 °C / +230 °C		

Note

(1) Rated voltage $\sqrt{P \times R}$

DIMENSIONS



GLOBAL MODEL	DIMENSIONS in inches (millimeters)			
	L	D	$L_{1\ max.}$	d
CPF1	0.240 ± 0.020 (6.10 ± 0.51)	0.090 ± 0.008 (2.29 ± 0.20)	0.310 (7.87)	0.025 ± 0.002 (0.64 ± 0.05)
CPF2	0.344 ± 0.031 (8.74 ± 0.79)	0.145 ± 0.015 (3.68 ± 0.38)	0.425 (10.80)	0.032 ± 0.002 (0.81 ± 0.05)
CPF3	0.555 ± 0.041 (14.10 ± 1.04)	0.180 ± 0.015 (4.57 ± 0.381)	0.650 (16.51)	0.032 ± 0.002 (0.81 ± 0.05)

Note

(1) Lead length for product in bulk pack. For product supplied in tape and reel, the actual lead length would be based on the body size, tape spacing and lead trim

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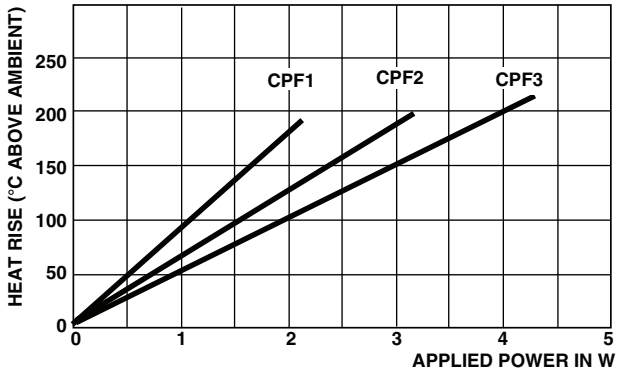
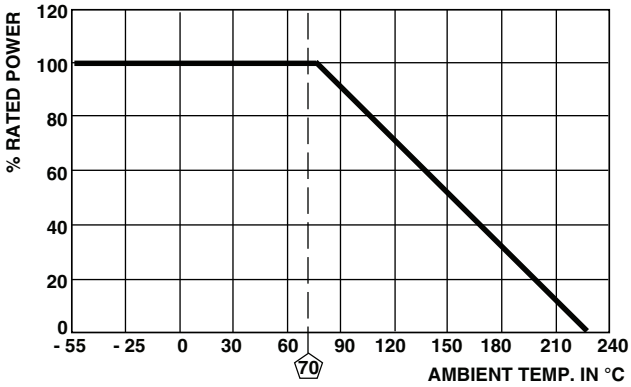
THERMAL RESISTANCE



DERATING



Note

- Surface temperatures were taken with an infrared pyrometer in +25 °C still air. Resistors were supported by their leads in test clips at a point 0.500" (12.70 mm) out from the resistor body ends

MATERIAL SPECIFICATIONS	
Element	Proprietary nickel-chrome alloy
Core	Cleaned high purity ceramic
Coating	Special high temperature conformal coat
Termination	Standard lead material is solder-coated Solderable and weldable per MIL-STD-1276, type C

MECHANICAL SPECIFICATIONS	
Terminal Strength	2 pound pull test
Solderability	Continuous satisfactory coverage when tested in accordance with MIL-STD-202, method 208

MARKING

Temperature Coefficient: T00 = 200 ppm, T0 = 150 ppm, T1 = 100 ppm, T2 = 50 ppm, T9 = 25 ppm, M = 300 ppm

CPF1, CPF2, CPF3: (5 lines)

DALE	Manufacturer's name
CPF-1	Style and size
49.9 kΩ	Value
1 % T2	Tolerance and TC
1208	4-digit date code

PERFORMANCE

TEST	MAX. ΔR (TYPICAL TEST LOTS)
Thermal Shock	± 1.0 %
Short Time Overload	± 0.5 %
Low Temperature Operation	± 0.5 %
Moisture Resistance	± 1.5 %
Resistance to Soldering Heat	± 0.5 %
Shock	± 0.5 %
Vibration	± 0.5 %
Terminal Strength	± 0.5 %
Dielectric Withstanding Voltage	± 0.5 %
Life	± 2.0 %

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