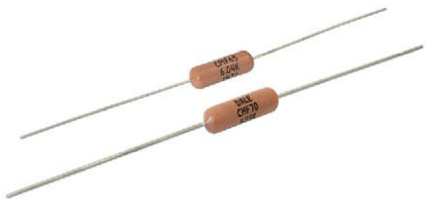
Metal Film Resistors, Axial, Industrial, Flame Retardant



FEATURES

- Flame retardant epoxy coating (UL 94 V-0)
- Especially suited for circuitry where functions, environments and duty cycles demand power resistors
- Controlled temperature coefficient
- Excellent high frequency characteristics
- Exceptionally low noise; typically 0.10 µV/V
- Low voltage coefficient to ± 5 ppm/V
- Operating temperature range: -55 °C to +175 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

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.

MATERIAL SPECIFICATIONS

Element	Vacuum-deposited nickel-chrome alloy
Core	Fire-cleaned high purity ceramic
Coating	Flame retardant epoxy, with flameproof undercoat; formulated for higher power, with superior moisture and mechanical protection
Solderability	Continuous satisfactory coverage when tested in accordance with MIL-R-10509

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING (1) $P_{25\,°C}$ W	POWER RATING (1) $P_{70\,°C}$ W	POWER RATING (1) $P_{125\,°C}$ W	MAXIMUM WORKING VOLTAGE V	RESISTANCE RANGE Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
CMF65..146	2.5	1.75	1.25	500	1 to 15M	1, 2, 5	100
CMF70..146	3	2	1.5	500	1 to 15M	1, 2, 5	100

Note

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

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CMF65...146	CMF70...146
Maximum Working Voltage	V≅	≤ 500	
Insulation Voltage (1 min)	V_{eff}	> 500	
Voltage Coefficient (Max.)	ppm/V	± 5 (measured between 10 % and full rated voltage)	
Dielectric Strength	V_{AC}	900	
Insulation Resistance	Ω	≥ 10^{11}	
Operating Temperature Range	°C	-55 to +175	
Terminal Strength (Pull test)	lb	2	5
Noise	dB	0.10 µV/V over a decade of frequency, with low and intermediate resistance values typically below 0.5 µV/V	
Weight (Max.)	g	1.20	1.30

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: CMF6551K100FKCP146 (preferred part numbering format)

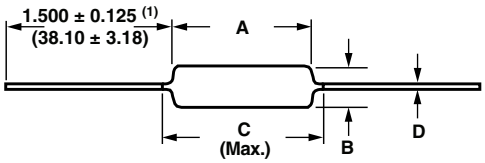
C	M	F	6	5	5	1	K	1	0	0	F	K	C	P	1	4	6

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMP. COEFFICIENT	PACKAGING	SPECIAL
CMF65 **CMF70**	**R** = Ω **K** = kΩ **M** = MΩ **10R000** = 10 Ω **1K3300** = 1.33 kΩ **1M0000** = 1.0 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	**K** = 100 ppm	**EK** = lead (Pb)-free, bulk **EA** = lead (Pb)-free, T/R (1000 pieces) **BF** = tin/lead, bulk **CP** = tin/lead, T/R (1000 pieces)	(Dash number) **146** = flame retardant

Note

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

DIMENSIONS in inches (millimeters)

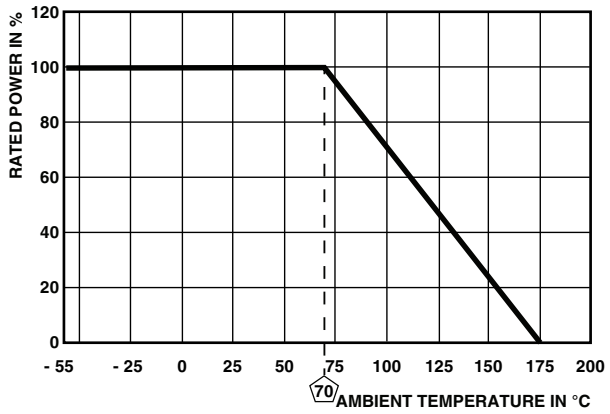


GLOBAL MODEL	A	B	C (Max.)	D
CMF65..146	0.562 ± 0.031 (14.27 ± 0.79)	0.215 ± 0.015 (5.46 ± 0.38)	0.687 (17.45)	0.025 ± 0.002 (0.64 ± 0.05)
CMF70..146	0.562 ± 0.031 (14.27 ± 0.79)	0.230 ± 0.015 (5.84 ± 0.38)	0.687 (17.45)	0.032 ± 0.002 (0.81 ± 0.05)

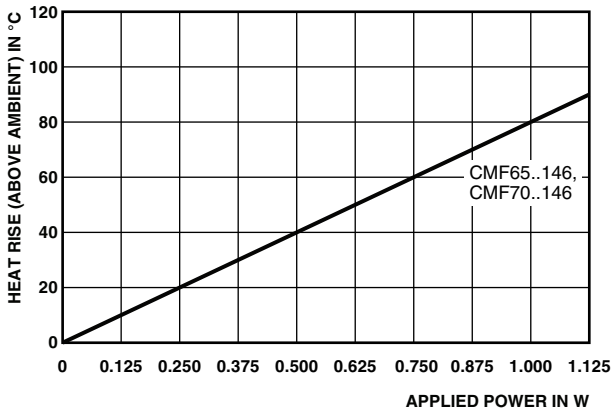
Note

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

DERATING



THERMAL RESISTANCE



PERFORMANCE

TEST (TEST METHODS - MIL-STD-202)	AT +70 °C	AT +125 °C
	MAXIMUM Δ*R* (TYPICAL TEST LOTS)	
Short Time Overload	± 0.05 %	± 0.05 %
Low Temperature Operation	± 0.05 %	± 0.05 %
Moisture Resistance	± 0.05 %	± 0.05 %
Shock	± 0.01 %	± 0.01 %
Vibration	± 0.04 %	± 0.04 %
Temperature Cycling	± 0.15 %	± 0.15 %
Load Life	± 1.0 %	± 1.0 %
Dielectric Withstanding Voltage	± 0.01 %	± 0.01 %
Effect of Solder	± 0.03 %	± 0.03 %

MARKING

CMF65-146, CMF70-146: (5 lines):

DALE	Manufacturer
C65-146	Model (C65-146 = CMF65-146, C70-146 = CMF70-146)
49.9KΩ	Value
1% T1	Tolerance and TC (T1 = 100 ppm)
1308	4-digit date code

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