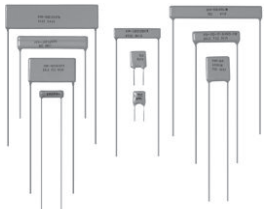
Thick Film Planar Resistors, Through-Hole, High Voltage



FEATURES

- Non-inductive design
- Matched sets available
- Ratio dividers available, see Vishay Techno's TR, TD datasheet
- Special testing available
- Low TCR: ± 200 ppm/°C standard, ± 100 ppm/°C available
- Tolerance: ± 10 %, ± 5 %, ± 2 %, ± 1 % standard tolerance and/or TCR matching available upon request
- Halogen-free according to IEC 61249-2-21 definition
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb Available

e3

RoHS* COMPLIANT

HALOGEN FREE

Note

* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

MECHANICAL SPECIFICATIONS

Terminal Strength: 5 pound pull test
Solderability: Continuous satisfactory coverage when tested in accordance with MIL-R-10509

MATERIAL SPECIFICATIONS

Element: High temperature fired cermet film
Core: High purity 96 % alumina
Coating: Conformal coat epoxy
Termination: Standard lead material is tin plated copper

TEMPERATURE COEFFICIENT CODE		
CODE	TEMPERATURE COEFFICIENT	RANGE
K	± 100 ppm/°C	- 55 °C to + 125 °C
N	± 200 ppm/°C	- 55 °C to + 125 °C

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL / SIZE	POWER RATING		MAXIMUM WORKING VOLTAGE (1)	RESISTANCE RANGE (2)	TOLERANCE	TEMPERATURE COEFFICIENT
	$P_{70\ °C}$ W	$P_{125\ °C}$ W	V	Ω	± %	± ppm/°C
FHV025	0.25	0.125	750	10K to 100M	1, 2, 5, 10	100, 200
FHV050	0.50	0.25	1.5K	10K to 100M	1, 2, 5, 10	100
				10K to 500M	1, 2, 5, 10	200
FHV075	0.25	0.125	3.75K	500 to 500M	1, 2, 5, 10	100
				100 to 1G	1, 2, 5, 10	200
FHV100	1	0.50	7.5K	500 to 1G	1, 2, 5, 10	100
				100 to 1G	1, 2, 5, 10	200
				1.1G to 2G	5, 10	200
FHV150	1.5	0.75	11.25K	1M to 1G	1, 2, 5, 10	100
				10K to 1G	1, 2, 5, 10	200
				1.1G to 2G	5, 10	200
FHV160	1	0.50	3.5K	500 to 1G	1, 2, 5, 10	100
				100 to 1G	1, 2, 5, 10	200
				1.1G to 2G	5, 10	200
FHV200	2	1	15K	500M to 1G	1, 2, 5, 10	100
				200 to 1G	1, 2, 5, 10	200
				1.1G to 8G	5, 10	200
FHV400	2	1	7.5K	1M to 1G	1, 2, 5, 10	100
				20K to 1G	1, 2, 5, 10	200
				1.1G to 2G	5, 10	200
FHV500	4	2	15K	1M to 1G	1, 2, 5, 10	100
				30K to 1G	1, 2, 5, 10	200
				1.1G to 10G	5, 10	200

Notes

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

(2) All resistance values are calibrated at 100 V_{DC}. Calibration at other voltages upon request.

For technical questions, contact: te1resistors@vishay.com

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GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: FHV02510K0FNEB (preferred part number format)

F	H	V	0	2	5	1	0	K	0	F	N	E	B

GLOBAL MODEL	SIZE	RESISTANCE VALUE	TOLERANCE	TCR	TERMINAL FINISH	PACKAGING
FHV	**025** **050** **075** **100** **150** **160** **200** **400** **500**	R = Ω K = kΩ M = MΩ G = GΩ **400R** = 400 Ω **10M0** = 10 MΩ **10G0** = 10 GΩ	**F** = ± 1.0 % **G** = ± 2.0 % **J** = ± 5.0 % **K** = ± 10.0 %	**K** = 100 ppm **N** = 200 ppm	**E** = Sn100 **R** = Sn60/Pb40	**B** = Bag **S** = Strip

Historical Part Numbering: FHV0251002FMe3 (will continue to be accepted)

FHV	025	1002	F	M	e3
HISTORICAL MODEL	SIZE	RESISTANCE VALUE	TOLERANCE	TCR	TERMINAL FINISH

Note

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

DIMENSIONS in inches (millimeters)

Figure 1

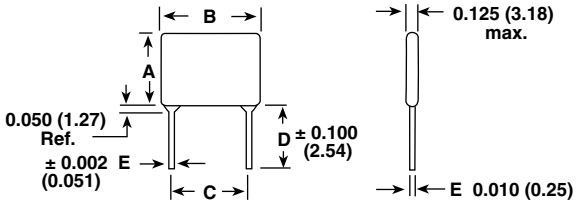
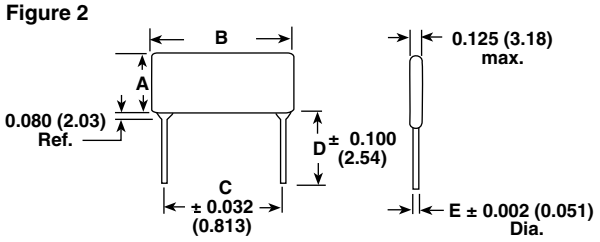


Figure 2

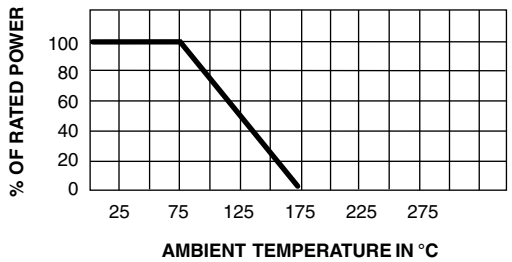


MODEL - SIZE	A (max.) (Height)	B (max.) (Length)	C (Lead Spacing)	D (Lead Length)	E (Lead DIA)	FIGURE
FHV025	0.300 (7.62)	0.300 (7.62)	0.200 (5.08)	0.250 (6.35)	0.018 (0.457)	1
FHV050	0.380 (9.65)	0.380 (9.65)	0.200 (5.08)	0.360 (9.14)	0.020 (0.508)	1
FHV075	0.210 (5.33)	0.570 (14.48)	0.400 (10.16)	1.50 (38.10)	0.025 (0.635)	2
FHV100	0.280 (7.11)	1.07 (27.18)	0.900 (22.86)	1.50 (38.10)	0.032 (0.813)	2
FHV150	0.330 (8.38)	1.57 (39.88)	1.40 (35.56)	1.50 (38.10)	0.032 (0.813)	2
FHV160	0.550 (13.97)	0.550 (13.97)	0.400 (10.16)	1.50 (38.10)	0.032 (0.813)	2
FHV200	0.330 (8.38)	2.04 (51.82)	1.90 (48.26)	1.50 (38.10)	0.032 (0.813)	2
FHV400	0.550 (13.97)	1.05 (26.67)	0.900 (22.86)	1.50 (38.10)	0.032 (0.813)	2
FHV500	0.550 (13.97)	2.07 (52.58)	1.90 (48.26)	1.50 (38.10)	0.032 (0.813)	2

ENVIRONMENTAL PERFORMANCE

TEST	MAXIMUM ΔR (Typical Test Lots)
Short time overload	< ± 0.2 %
Moisture resistance	< ± 0.5 %
Shock	< ± 0.2 %
Vibration	< ± 0.2 %
Temperature cycling	< ± 0.5 %
Load life	< ± 1.0 %
Dielectric withstanding voltage	< ± 0.15 %
Resistance to soldering heat	< ± 0.1 %

DERATING



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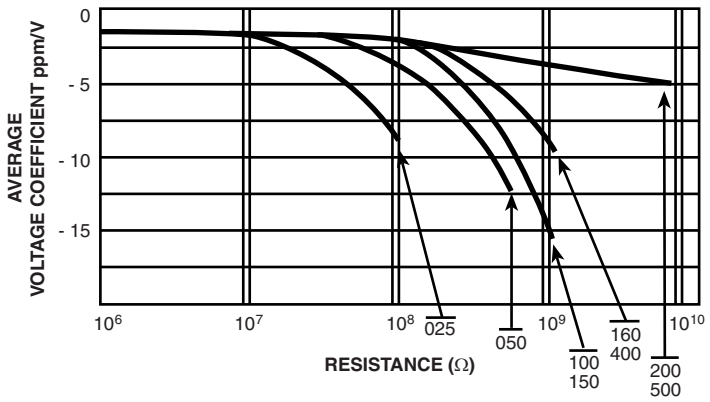
VOLTAGE COEFFICIENT



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