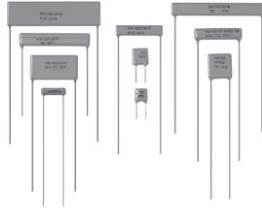


# Thick Film Planar Resistors, Through-Hole, High Voltage



## 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

## FEATURES

- Non-inductive design
- Matched sets available
- Ratio dividers available, see Vishay Techno's TR, TD datasheet
- Special testing available
- Low TCR:  $\pm 200$  ppm/ $^{\circ}\text{C}$  standard,  $\pm 100$  ppm/ $^{\circ}\text{C}$  and  $\pm 50$  ppm/ $^{\circ}\text{C}$  available
- Tolerance:  $\pm 10\%$ ,  $\pm 5\%$ ,  $\pm 2\%$ ,  $\pm 1\%$  standard tolerance and/or TCR matching available upon request
- Halogen-free according to IEC 61249-2-21 definition
- Compliant to RoHS directive 2002/95/EC



**RoHS\***  
COMPLIANT

**HALOGEN FREE**

## TEMPERATURE COEFFICIENT CODE

CODE	TEMPERATURE COEFFICIENT	RANGE
K	$\pm 100$ ppm/ $^{\circ}\text{C}$	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$
N	$\pm 200$ ppm/ $^{\circ}\text{C}$	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$

## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL / SIZE	POWER RATING		MAXIMUM WORKING VOLTAGE <sup>(1)</sup> V	RESISTANCE RANGE <sup>(2)</sup> $\Omega$	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm$ ppm/ $^{\circ}\text{C}$
	P <sub>70 °C</sub> W	P <sub>125 °C</sub> W				
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

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

<sup>(2)</sup> All resistance values are calibrated at 100 V<sub>DC</sub>. Calibration at other voltages upon request.

\* Pb containing terminations are not RoHS compliant, exemptions may apply

**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 10MO = 10 MΩ 10GO = 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

**DIMENSIONS** in inches (millimeters)

Figure 1

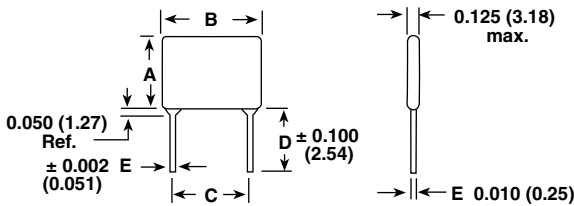
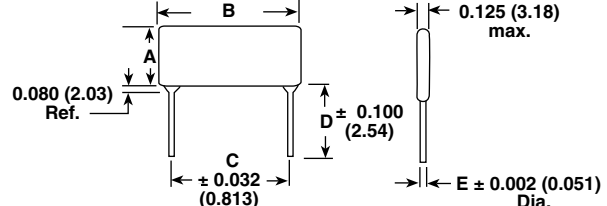


Figure 2

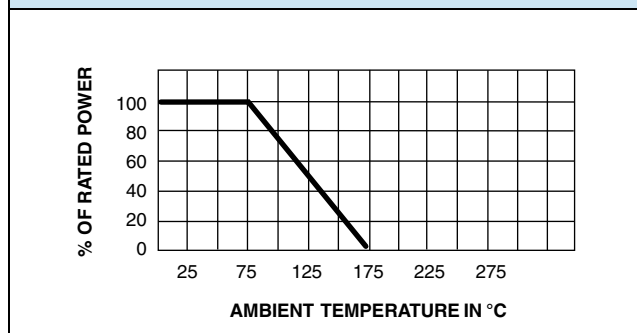


MODEL - SIZE	A (max.)	B (max.)	C	D	E	FIGURE
FHV025	0.300 (7.62)	0.300 (7.62)	0.200 (5.08)	0.250 (6.35)	0.018 (0.457)	1
FHV050	0.380 (9.65)	0.380 (9.65)	0.200 (5.08)	0.360 (9.14)	0.020 (0.508)	1
FHV075	0.210 (5.33)	0.570 (14.48)	0.400 (10.16)	1.50 (38.10)	0.025 (0.635)	2
FHV100	0.280 (7.11)	1.07 (27.18)	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

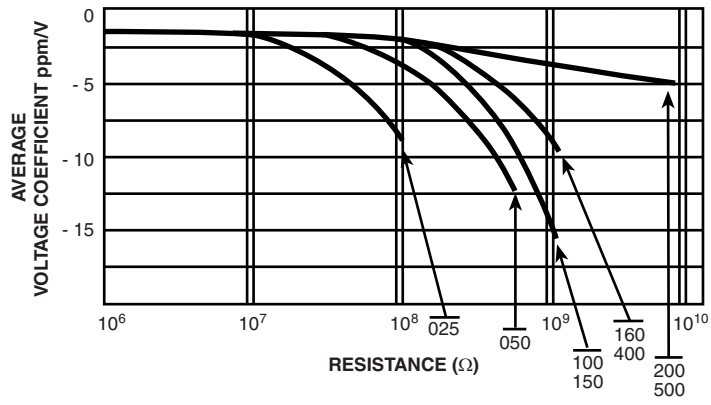
**ENVIRONMENTAL PERFORMANCE**

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**



**VOLTAGE COEFFICIENT**





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