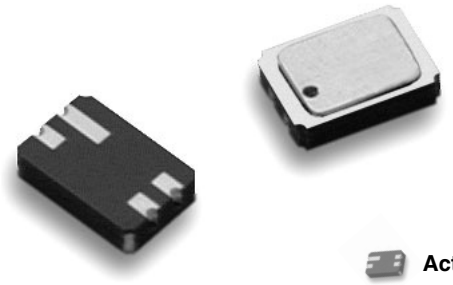
MPH

Vishay Thin Film

Hermetic, 50 Mil Pitch, Leadless Chip Resistor Network



Actual Size

Vishay Thin film offers a four terminal hermetic leadless chip carrier package with precision matched pair elements. The network features tight ratio tolerance and close tracking over a 100 Ω to 100 kΩ resistance range. For custom schematics and values contact applications engineering.

FEATURES

- Lead (Pb)-free available
- True hermetic construction
- Exceptional stability and performance characteristics (500 ppm at + 70 °C, 10 000 h)
- Nickel barrier terminations
- Stable thin film resistor element (500 ppm at + 70 °C, 10 000 h)
- Military/Aerospace
- Hermetically sealed

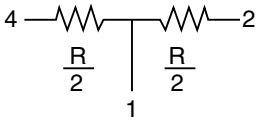
Pb-free Available

RoHS* COMPLIANT

TYPICAL PERFORMANCE

	ABS	TRACKING
TCR	25	5
	ABS	RATIO
TOL	0.1	0.05

SCHEMATIC



STANDARD ELECTRICAL SPECIFICATIONS			
TEST		**SPECIFICATIONS**	**CONDITIONS**
Material		Passivated nichrome	
Resistance Range		100 Ω to 100 kΩ	
TCR:	**Tracking**	± 2 ppm/°C (typical < 1 ppm/°C equal values)	- 55 °C to + 125 °C
	Absolute	± 25 ppm/°C standard	- 55 °C to + 125 °C
Tolerance:	**Ratio**	± 0.1 % to ± 0.05 %	+ 25 °C
	Absolute	± 1.0 % to ± 0.1 %	+ 25 °C
Power Rating:	**Resistor**	1000 mW per element	Max. at + 70 °C
	Package	250 mW	Max. at + 70 °C
Stability:	**ΔR Absolute**	0.10 %	2000 h at + 70 °C
	ΔR Ratio	0.03 %	2000 h at + 70 °C
Voltage Coefficient		< 0.1 ppm/V	
Working Voltage		50 V	
Operating Temperature Range		- 55 °C to + 125 °C	
Storage Temperature Range		- 55 °C to + 125 °C	
Noise		< - 30 dB	
Thermal EMF		0.08 µV/°C	
Shelf Life Stability:	**Absolute**	< 100 ppm	1 year at + 25 °C
	Ratio	< 20 ppm	1 year at + 25 °C

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

For technical questions, contact: thin-film@vishay.com

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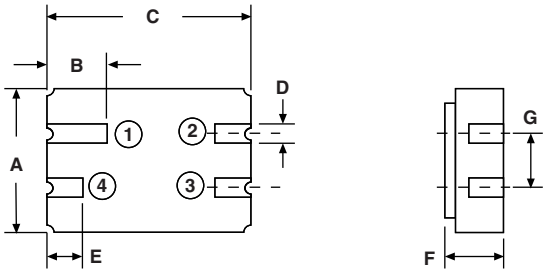
DIMENSIONS in inches and millimeters



(Bottom View)

DIMENSIONS	INCHES	MM
A	0.155	3.937
B	0.080	2.032
C	0.225	5.715
D	0.025 typical	0.635
E	0.040	1.016
F	0.070	1.778
G	0.050	1.27

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome
Substrate Material	Alumina
Body	Ceramic
Terminals	Gold over nickel
Marking Resistance to Solvents	Per MIL-PRF-83401
Lead (Pb)-free Option	96.5 % Sn, 3.0 % Ag, 0.5 % Cu
Lead (Pb)-free Finish	Hot solder dip

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MPHK1003BUF (preferred part number format)

M	P	H	K	1	0	0	3	B	U	F
M	P	H	T	K	1	0	0	3	A	U	F

GLOBAL MODEL (3 or 4 digits)

MPH (Tin lead)

MPHT (Lead (Pb)-free) (e1)

TCR CHARACTERISTIC

E = 25 ppm/°C
H = 50 ppm/°C
K = 100 ppm/°C

RESISTANCE

First 3 digits are significant figures and the last digit specifies the number of zeroes to follow.

Example:
1001 = 1K
1002 = 10K

TOLERANCE AND RATIO TOLERANCE

Abs. Tol.	Ratio
A = 0.1 %	0.05 %
B = 0.1 %	0.1 %
C = 0.25 %	0.1 %
D = 0.5 %	0.1 %
F = 1 %	0.5 %

PACKAGING

TAPE AND REEL
T0 = 100 min. 100 mult
T1 = 1000 min. 1000 mult
T3 = 300 min. 300 mult
T5 = 500 min. 500 mult
TF = Full reel 2500
TS = 100 min. 1 mult

UF = TUBED

Historical Part Number example: MPHR1001B (will continue to be accepted)

MPH	R	1001	B
SERIES	TCR CHARACTERISTIC	RESISTANCE	TOLERANCE AND RATIO TOLERANCE

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