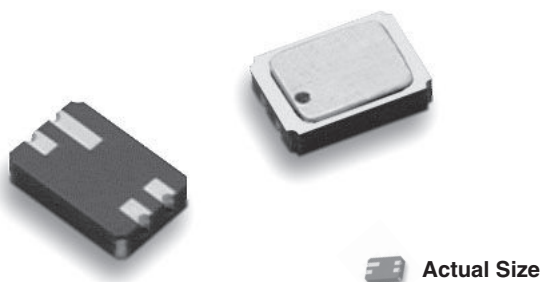


Hermetic, 50 mil Pitch, Leadless Thin Film Chip Resistor, Surface Mount Network



Vishay Dale 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 k Ω resistance range. For custom schematics and values contact applications engineering.

FEATURES

- True hermetic construction
- Exceptional stability and performance characteristics ratio stability ($\Delta R \pm 0.015\%$ at 70 °C for 2000 h)
- Nickel barrier terminations
- Military/aerospace
- Hermetically sealed
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



RoHS*
COMPLIANT
HALOGEN
FREE

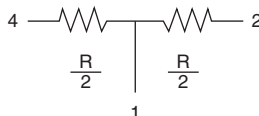
Note

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

TYPICAL PERFORMANCE

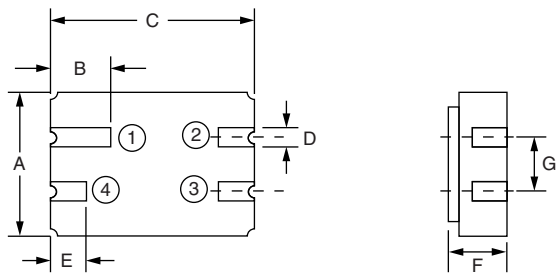
	ABSOLUTE	TRACKING
TCR	25	5
	ABSOLUTE	RATIO
TOL.	0.1	0.05

SCHEMATIC



STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	4	-
Resistance Range	100 Ω to 100 k Ω	-
TCR: Absolute	± 25 ppm/°C (standard)	- 55 °C to + 125 °C
TCR: Tracking	± 2 ppm/°C (typical < 1 ppm /°C equal values)	- 55 °C to + 125 °C
Tolerance: Absolute	$\pm 0.1\%$ to $\pm 1.0\%$	+ 25 °C
Tolerance: Ratio	$\pm 0.05\%$ to $\pm 0.1\%$	+ 25 °C
Power Rating: Resistor	250 mW (per element)	Maximum at + 70 °C
Power Rating: Package	1000 mW	Maximum at + 70 °C
Stability: Absolute	$\Delta R \pm 0.05\%$	2000 h at + 70 °C
Stability: Ratio	$\Delta R \pm 0.015\%$	2000 h at + 70 °C
Voltage Coefficient	< 0.1 ppm/V	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	- 55 °C to + 125 °C	-
Storage Temperature Range	- 55 °C to + 150 °C	-
Noise	< - 30 dB	-
Thermal EMF	0.08 μ V/°C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01\%$	1 year at + 25 °C
Shelf Life Stability: Ratio	$\Delta R \pm 0.002\%$	1 year at + 25 °C

DIMENSIONS in inches and millimeters

 <p>BOTTOM VIEW</p>	DIMENSION	INCHES	MILLIMETERS
	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
Tin Lead Option	Sn63
Lead (Pb)-free Option	96.5 % Sn, 3.0 % Ag, 0.5 % Cu
Tin Lead and Lead (Pb)-free	Hot solder dip

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: **MPHK1003BUF**

<div> <div>M</div> <div>P</div> <div>H</div> <div>K</div> <div>1</div> <div>0</div> <div>0</div> <div>3</div> <div>B</div> <div>U</div> <div>F</div> </div>			<div> <div>M</div> <div>P</div> <div>H</div> <div>T</div> <div>K</div> <div>1</div> <div>0</div> <div>0</div> <div>3</div> <div>A</div> <div>U</div> <div>F</div> </div>		
GLOBAL MODEL (3 or 4 digits)	TCR CHARACTERISTIC	RESISTANCE	TOLERANCE AND RATIO TOLERANCE		PACKAGING
MPH (Tin lead) MPHT (Lead (Pb)-free) (e1)	E = 25 ppm/°C H = 50 ppm/°C K = 100 ppm/°C	First 3 digits are significant figures and the last digit specifies the number of zeros to follow. Example: 1001 = 1K 1002 = 10K	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 %		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: **MPHE1001B** (for reference purposes only)

<div>MPH</div> <div>SERIES</div>	<div>E</div> <div>TCR CHARACTERISTIC</div>	<div>1001</div> <div>RESISTANCE</div>	<div>B</div> <div>TOLERANCE AND RATIO TOLERANCE</div>
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