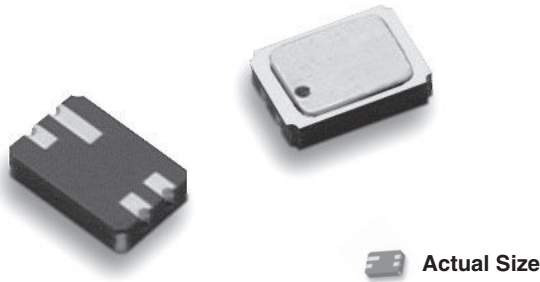


Hermetic, 50 mil Pitch, Leadless Thin Film Chip Resistor, Surface Mount Network



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 kΩ 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



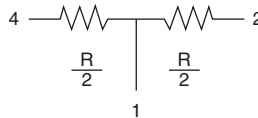
Note

* 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 kΩ	-
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	± 0.1 % to ± 1.0 %	+ 25 °C
Tolerance: Ratio	± 0.05 % to ± 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 μV/°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 style="text-align: center;">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: MPH ^M K ^P 1 ^H 0 ^K 0 ¹ 3 ⁰ B ⁰ U ³ F ^B																											
<table style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">M</td> <td style="border: 1px solid black; padding: 2px;">P</td> <td style="border: 1px solid black; padding: 2px;">H</td> <td style="border: 1px solid black; padding: 2px;">K</td> <td style="border: 1px solid black; padding: 2px;">1</td> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="border: 1px solid black; padding: 2px;">3</td> <td style="border: 1px solid black; padding: 2px;">B</td> <td style="border: 1px solid black; padding: 2px;">U</td> <td style="border: 1px solid black; padding: 2px;">F</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">M</td> <td style="border: 1px solid black; padding: 2px;">P</td> <td style="border: 1px solid black; padding: 2px;">H</td> <td style="border: 1px solid black; padding: 2px;">T</td> <td style="border: 1px solid black; padding: 2px;">K</td> <td style="border: 1px solid black; padding: 2px;">1</td> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="border: 1px solid black; padding: 2px;">0</td> <td style="border: 1px solid black; padding: 2px;">3</td> <td style="border: 1px solid black; padding: 2px;">A</td> <td style="border: 1px solid black; padding: 2px;">U</td> <td style="border: 1px solid black; padding: 2px;">F</td> </tr> </table>					M	P	H	K	1	0	0	3	B	U	F	M	P	H	T	K	1	0	0	3	A	U	F
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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	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Abs. Tol.</th> <th style="text-align: left;">Ratio</th> </tr> </thead> <tbody> <tr> <td>A = 0.1 %</td> <td>0.05 %</td> </tr> <tr> <td>B = 0.1 %</td> <td>0.1 %</td> </tr> <tr> <td>C = 0.25 %</td> <td>0.1 %</td> </tr> <tr> <td>D = 0.5 %</td> <td>0.1 %</td> </tr> <tr> <td>F = 1 %</td> <td>0.5 %</td> </tr> </tbody> </table>	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											
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