

MPM (Divider)

Vishay Thin Film

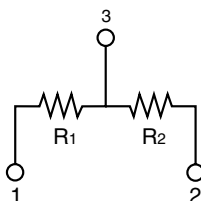


Molded, SOT-23 Resistor Network



Vishay Thin Film MPM Series Dividers provide ± 2 ppm/ $^{\circ}$ C tracking and a ratio tolerance as tight as 0.01 %, small size, and exceptional stability for all surface mount applications. The standard SOT-23 package format with unity and common standard resistance divider ratios provide easy selection for most applications requiring matched pair resistor elements. The ratios listed are available for off the shelf delivery. If you require a non-standard ratio, consult the applications engineering group as we may be able to meet your requirements with a custom design.

SCHEMATIC



FEATURES

- Lead (Pb)-free available
- Stocked
- Standard Footprint



RoHS*
COMPLIANT

TYPICAL PERFORMANCE

	ABS	TRACKING
TCR	25	2
	ABS	RATIO
TOL	0.1	0.05

STANDARD DIVIDER RATIO (R₂/R₁)

RATIO	R ₂ (Ω)	R ₁ (Ω)
100:1	100K	1K
50:1	50K	1K
25:1	25K	1K
20:1	20K	1K
10:1	10K	1K
9:1	9K	1K
6:1	6K	1K
5:1	10K	2K
5:1	5K	1K
4:1	8K	2K
4:1	4K	1K
2:1	10K	5K
2:1	2K	1K
1:1	50K	50K
1:1	25K	25K
1:1	10K	10K
1:1	5K	5K
1:1	2.5K	2.5K
1:1	1K	1K
1:1	500	500
1:1	250	250

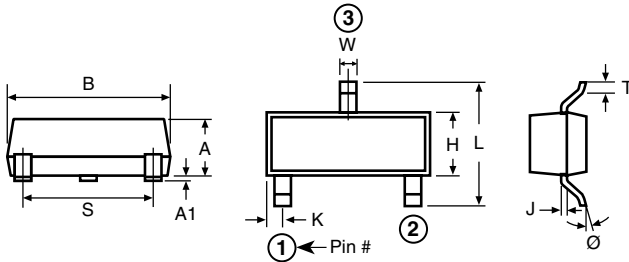
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated Nichrome	
TCR:	Tracking	± 2 ppm/ $^{\circ}$ C (typical)
	Absolute	± 25 ppm/ $^{\circ}$ C
Tolerance:	Ratio	± 0.5 % to 0.01 %
	Absolute	± 1.0 % to ± 0.05 %
Power Rating:	Resistor	100 mW
	Package	200 mW
Stability:	ΔR Absolute	0.10 %
	ΔR Ratio	0.03 %
Voltage Coefficient	0.1 ppm/V	
Working Voltage 100 Volts Max.	-	
Operating Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	
Storage Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	
Noise	< - 30 dB	
Thermal EMF	0.2 μ V/ $^{\circ}$ C	
Shelf Life Stability (Ratio)	50 ppm Max.	1 year at + 25 $^{\circ}$ C

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



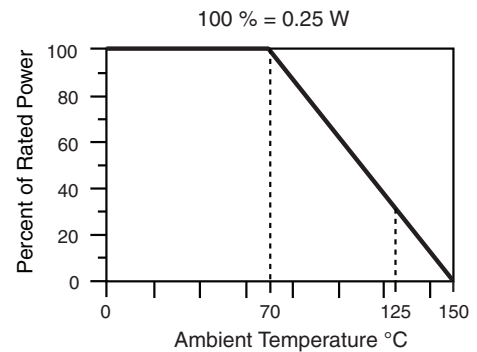
DIMENSIONS AND IMPRINTING in inches and millimeters



DIMENSION	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.031	0.040	0.79	1.02
A1	0.001	0.004	0.02	0.10
B	0.105	0.120	2.67	3.05
S	0.071	0.079	1.80	2.00
W	0.015	0.021	0.38	0.54
L	0.083	0.098	2.10	2.50
H	0.047	0.055	1.20	1.40
T	0.005	0.010	0.13	0.25
J	0.0035	0.0059	0.089	0.15
K	0.017	0.022	0.44	0.55
Ø	0	8°	0	8°

MECHANICAL SPECIFICATIONS	
Resistive Element	Passivated Nichrome
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper alloy #42 Sn62 plated
Lead Coplanarity	3 Mils Max.
Lead (Pb)-free Option	100 % Sn Matte
Lead (Pb)-free Finish	Plated

DERATING CURVE



GLOBAL PART NUMBER INFORMATION																													
New Global Part Numbering: MPM1002AWS (preferred part number format)																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">M</td> <td style="padding: 5px;">P</td> <td style="padding: 5px;">M</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">A</td> <td style="padding: 5px;">W</td> <td style="padding: 5px;">S</td> </tr> <tr> <td style="padding: 5px;">M</td> <td style="padding: 5px;">P</td> <td style="padding: 5px;">M</td> <td style="padding: 5px;">T</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">A</td> <td style="padding: 5px;">T</td> <td style="padding: 5px;">1</td> </tr> </table>	M	P	M	1	0	0	3	A	W	S	M	P	M	T	1	0	0	1	5	0	0	1	A	T	1				
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<p>GLOBAL MODEL (3 or 4 digits)</p> <p>MPM (Tin Lead)</p> <p>MPMT (Lead (Pb)-free) (e3)</p>	<p>RESISTANCE (4 or 8 digits)</p> <p>First 3 digits are significant figures and the last digit specifies the number of zeroes to follow. When like values are required use total resistance. When dual values are required list both values.</p> <p>Example: (list R1 first in part number with dual values) 1002 = 10K (5K/5K) 1003 = 100K (50K/50K) 10011002 = 1K/10K divider</p>	<p>TOLERANCE AND RATIO TOLERANCE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Abs. Tol.</th> <th>Ratio</th> </tr> <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> <tr> <td>*Z = 0.1 %</td> <td>0.025 %</td> </tr> <tr> <td>*Q = 0.05 %</td> <td>0.01 %</td> </tr> </table> <p><small>* Tol. Available 1K and up equal values only</small></p>	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 %	*Z = 0.1 %	0.025 %	*Q = 0.05 %	0.01 %	<p>PACKAGING</p> <p>BS = BULK 100 Min 1 Mult WS = WAFFLE 100 Min 1 Mult</p> <p>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 4000 TS = 100 Min 1 Mult</p>										
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