

Precision Matched Pair Resistor Networks



KEY BENEFITS

- 1:1 to 100:1 ratio range
- Ratio tolerances to $\pm 0.01\%$
- Tight TCR tracking to ± 2 ppm/ $^{\circ}\text{C}$
- Low noise to < -30 dB
- Small size (SOT-23 format)

APPLICATIONS

- Instrumentation amplifiers
- Measurement bridges
- Precision voltage dividers
- Signal process controls

RESOURCES

- Datasheet: MPM Series - <http://www.vishay.com/doc?60001>
- For technical questions contact thinfilm@vishay.com

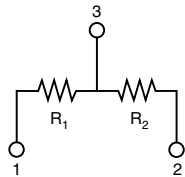


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Vishay Dale Thin Film MPM Series Dividers provide ± 2 ppm/ $^{\circ}$ C tracking and a ratio tolerance as tight as 0.01 %, small size, and exceptional stability for all surface mount applications. The standard SOT-23 package format with unity and common 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.

SCHEMATIC



FEATURES

- Excellent long term ratio stability ($\Delta R \pm 0.015$ %, 2000 h, + 70 $^{\circ}$ C)
- Ratio tolerances to ± 0.01 %
- Low TCR tracking ± 2 ppm
- Standard JEDEC TO-236 package variation AB
- 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

TCR	ABSOLUTE	TRACKING
	25	2
TOL.	ABSOLUTE	RATIO
	0.1	0.05

STANDARD DIVIDER RATIO (R_2/R_1)		
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	-
Pin/Lead Number	3	-
Resistance Range	250 Ω to 100 k Ω per resistor	-
TCR: Absolute	± 25 ppm/ $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
TCR: Tracking	± 2 ppm/ $^{\circ}$ C (typical)	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
Tolerance: Absolute	± 0.05 % to ± 1.0 %	+ 25 $^{\circ}$ C
Tolerance: Ratio	± 0.01 % to 0.5 %	+ 25 $^{\circ}$ C
Power Rating: Resistor	100 mW	Maximum at + 70 $^{\circ}$ C
Power Rating: Package	200 mW	Maximum at + 70 $^{\circ}$ C
Stability: Absolute	$\Delta R \pm 0.05$ %	2000 h at + 70 $^{\circ}$ C
Stability: Ratio	$\Delta R \pm 0.015$ %	2000 h at + 70 $^{\circ}$ C
Voltage Coefficient	0.1 ppm/V	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	-
Storage Temperature Range	- 55 $^{\circ}$ C to + 150 $^{\circ}$ C	-
Noise	< - 30 dB	-
Thermal EMF	0.2 μ V/ $^{\circ}$ C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01$ %	1 year at + 25 $^{\circ}$ C
Shelf Life Stability: Ratio	$\Delta R \pm 0.002$ %	1 year at + 25 $^{\circ}$ C

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