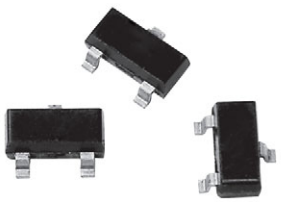
Molded, SOT-23 Thin Film Resistor, Surface Mount Divider Network



Actual Size

FEATURES

- Excellent long term ratio stability (ΔR ± 0.015 %, 2000 h, +70 °C)
- Ratio tolerances to ± 0.01 %
- Low TCR tracking ± 2 ppm
- Zero ohm jumper option available
- Standard JEDEC® TO-236 package variation AB
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS* Available

HALOGEN FREE

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

LINKS TO ADDITIONAL RESOURCES

Product Page | Packages | Footprints | Order Samples

Vishay Dale Thin Film MPM series dividers provide ± 2 ppm/°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. Ratios not listed but within the datasheet limits are available without NRE charge. See "Global Part Number Information" table for guidance how to create part number for ordering.

ATTENTION!
Observe Precautions for
Handling Electrostatic Sensitive Devices!

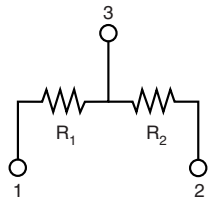
TYPICAL PERFORMANCE

●	ABSOLUTE	TRACKING
TCR	25	2
	ABSOLUTE	RATIO
TOL.	0.1	0.05

Note

- Typical performance TCR and tolerance does not apply to zero ohm jumper

SCHEMATIC



STANDARD DIVIDER RATIOS (R_2/R_1) COMMONLY STOCKED BY DISTRIBUTORS

RATIO	R_2 (Ω)	R_1 (Ω)	RATIO	R_2 (Ω)	R_1 (Ω)
100:1	100K	1K	2:1	10K	5K
50:1	50K	1K	2:1	2K	1K
25:1	25K	1K	1:1	100K	100K
20:1	20K	1K	1:1	50K	50K
10:1	20K	2K	1:1	25K	25K
10:1	10K	1K	1:1	10K	10K
9:1	9K	1K	1:1	5K	5K
9:1	900	100	1:1	2.5K	2.5K
6:1	6K	1K	1:1	2K	2K
5:1	10K	2K	1:1	1K	1K
5:1	5K	1K	1:1	500	500
4:1	8K	2K	1:1	250	250
4:1	4K	1K	1:2	5K	10K
3:1	7.5K	2.5K	1:2.5	10K	25K
2:1	50K	25K	1:4	7.5K	30K
2:1	12K	6K	1:9	10K	90K

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Downloaded from Arrow.com.

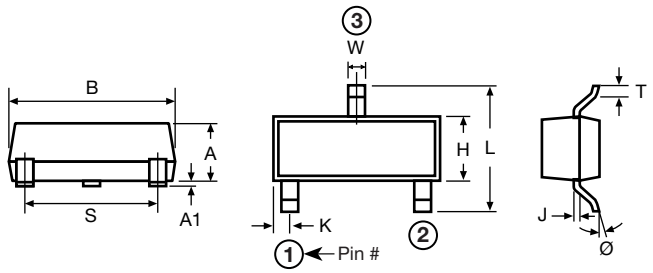
STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin / lead number	3	-
Resistance range	250 Ω to 100 kΩ per resistor	-
Resistance for jumper	≤ 50 mΩ	-
TCR: absolute	± 25 ppm/°C	-55 °C to +125 °C
TCR: tracking	± 2 ppm/°C (typical)	-55 °C to +125 °C
Tolerance: absolute	± 0.05 % to ± 1.0 %	+25 °C
Tolerance: ratio	± 0.01 % to 0.5 %	+25 °C
Power rating: resistor	100 mW	Maximum at +70 °C
Power rating: package	200 mW	Maximum at +70 °C
Stability: absolute	Δ*R* ± 0.05 %	2000 h at +70 °C
Stability: ratio	Δ*R* ± 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	0.2 µV/°C	-
Shelf life stability: absolute	Δ*R* ± 0.01 %	1 year at +25 °C
Shelf life stability: ratio	Δ*R* ± 0.002 %	1 year at +25 °C

Note

- TCR and TCR tracking are not available for parts with zero ohm jumpers

DIMENSIONS AND IMPRINTING in inches and millimeters

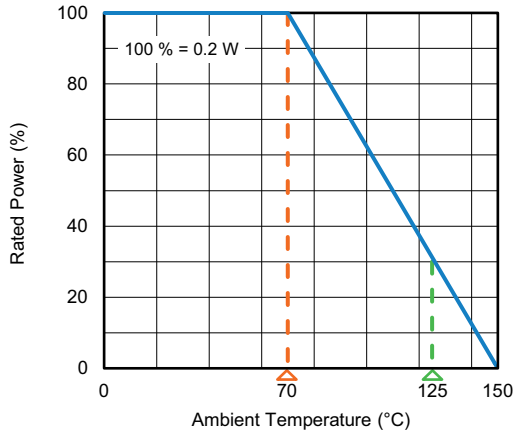


DIMENSION	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.031	0.040	0.79	1.02
A1	0.001	0.004	0.02	0.10
B	0.105	0.120	2.67	3.05
S	0.071	0.079	1.80	2.00
W	0.015	0.021	0.38	0.54
L	0.083	0.098	2.10	2.50
H	0.047	0.055	1.20	1.40
T	0.005	0.010	0.13	0.25
J	0.0035	0.0059	0.089	0.15
K	0.017	0.022	0.44	0.55
Ø	0	8°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

MECHANICAL SPECIFICATIONS

Resistive element	Passivated nichrome
Substrate material	Silicon
Body	Molded epoxy
Terminals	Copper alloy
Lead (Pb)-free option	100 % matte tin
Tin lead option	Sn85
Tin lead and lead (Pb)-free finish	Plated

DERATING CURVE



For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Downloaded from Arrow.com.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MPM1003AWS

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

GLOBAL MODEL (3 or 4 digits)

MPM
(Tin lead)

MPMT
(Lead (Pb)-free)
(e3)

RESISTANCE (4 or 8 digits)

First 3 digits are significant figures and the last digit specifies the number of zeros to follow. When like values are required use total resistance. When dual values are required list both values.
0000 = zero ohm jumper for R value
UUUU = open connection in place of R value

Example:
(List R_1 first in part number with dual values)
1002 = 10K (5K / 5K)
1003 = 100K (50K / 50K)
10011002 = 1K / 10K divider
0000UUUU = R_1 = jumper, R_2 = open
UUUU0000 = R_1 = open, R_2 = jumper
00UUUU00 = jumper connection pin 1 to pin 2
0000 = R_1 and R_2 = jumpers
00001002 = R_1 = jumper, R_2 = 10K
50010000 = R_1 = 5K, R_2 = jumper

TOLERANCE AND RATIO TOLERANCE (1)

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 % (2)	0.025 %
Q = 0.05 % (2)	0.01 %
N = for jumpers only	

PACKAGING

BS = BULK 100 min., 1 mult.
WS = WAFFLE 100 min., 1 mult.

TAPE AND REEL
T0 = 100 min., 100 mult.
T1 = 1000 min., 1000 mult. (3)
T3 = 300 min., 300 mult.
T5 = 500 min., 500 mult.
TF = full reel 4000
TS = 100 min., 1 mult.

Historical Part Number Example: MPM1002BW (for reference purposes only)

MPM	1002	B	W
SERIES	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING

Notes
(1) For combinations of a resistor and a zero ohm jumper only the absolute tolerance applies to the resistor value
(2) Tolerance available 1K and up equal values only
(3) Preferred packaging code

For technical questions, contact: thinfilm@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Downloaded from Arrow.com.

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

© 2026 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Downloaded from Arrow.com.