Molded, SC-70 Thin Film Resistor, Surface Mount Network

Vishay Dale Thin Film MP Series Dividers provide ± 2 ppm/°C tracking and a ratio tolerance as tight as ± 0.05 %, ultra small size, 3 or 4 lead package and exceptional stability for all surface mount applications. The standard SC-70 package format with common standard resistance values provide easy selection for most applications requiring matched pair resistor elements. If you require a non-standard ratio, consult the applications engineering group as we may be able to meet your requirements.

FEATURES

- Small physical size EIAJ SC70 format
- Tight resistance ratio tolerances ± 0.05 %
- Low TCR tracking ± 2 ppm
- Excellent long term ratio stability (ΔR ± 0.015 % at 70 °C for 2000 h)
- Center-tapped or isolated matched pair resistors
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free Available

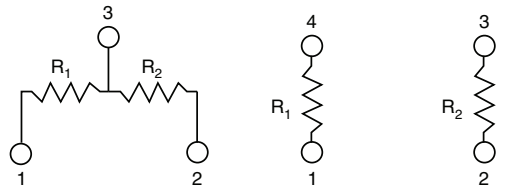
RoHS* Available

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

SCHEMATIC



3 LEAD VERSION

4 LEAD VERSION

TYPICAL PERFORMANCE

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

STANDARD RESISTANCE VALUES

TYPE	STANDARD VALUES	
	R_1 (Ω)	R_2 (Ω)
MP3	500	500
	1K	1K
	10K	10K
MP4	1K	1K
	10K	10K
	50K	50K

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	3, 4	-
Resistance Range	100 Ω to 50 kΩ per resistor	-
TCR: Absolute	± 25 ppm/°C	-55 °C to +125 °C
TCR: Tracking	± 2 ppm/°C (typical)	-55 °C to +125 °C
Tolerance: Absolute	± 0.10 % to ± 1.0 %	+25 °C
Tolerance: Ratio	± 0.05 % (standard), ± 1.0 %	-
Power Rating: Resistor	0.075 W	Maximum at +70 °C
Power Rating: Package	0.150 W	Maximum at +70 °C
Stability: Absolute	ΔR ± 0.05 %	2000 h at +70 °C
Stability: Ratio	ΔR ± 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	0.1 µV/°C	-
Shelf Life Stability: Absolute	ΔR ± 0.01 %	1 year at +25 °C
Shelf Life Stability: Ratio	ΔR ± 0.002 %	1 year at +25 °C

For technical questions, contact: thinfilm@vishay.com

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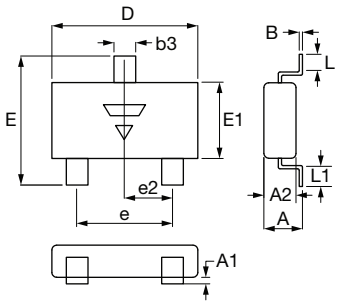
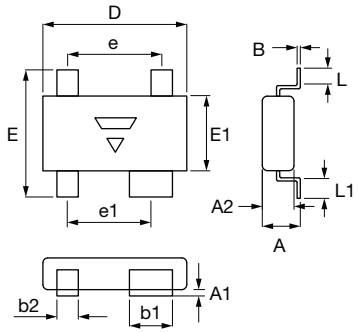
DIMENSIONS AND IMPRINTING in millimeters

SC70 3L



SC70 4L

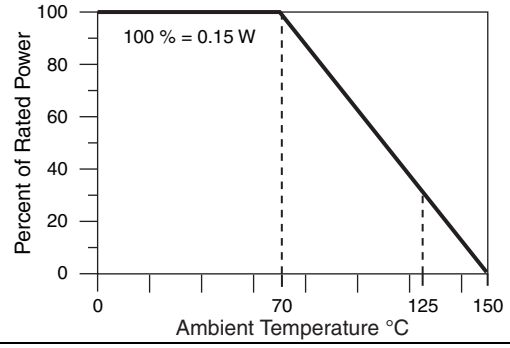


DIMENSION	MIN.	MAX.
A	0.800	1.100
A1	0.000	0.100
A2	0.800	1.000
B	0.100	0.018
b1	0.575	0.700
b2	0.150	0.300
b3	0.250	0.400
D	1.800	2.200
E	1.800	2.400
E1	1.150	1.350
e	1.300 BSC	-
e1	1.150 BSC	-
e2	0.650 BSC	-
L	0.100	0.030
L1	0.260	0.460

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



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: MP32001AWS

M	P	3				2	0	0	1			A	W	S
M	P	T	4	1	0	0	1	5	0	0	1	B	T	1

GLOBAL MODEL (2 or 3 digits)

MP (Tin lead)

MPT (Lead (Pb)-free) (e3)

LEADS

3
4

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.
Example:
(List R1 first in part number with dual values)
1002 = 10K (5K/5K)
10011002 = 1K/10K divider

TOLERANCE AND RATIO TOLERANCE

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 %	0.5 %

PACKAGING

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

TAPE AND REEL
T1 = 1000 min., 1000 mult. (1)

Note
(1) Preferred packaging code

Historical Part Number Example: MP32002BW (for reference purposes only)

MP	3	2002	B	W
SERIES	LEADS	RESISTANCE	TOLERANCE AND RATIO TOLERANCE	PACKAGING

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