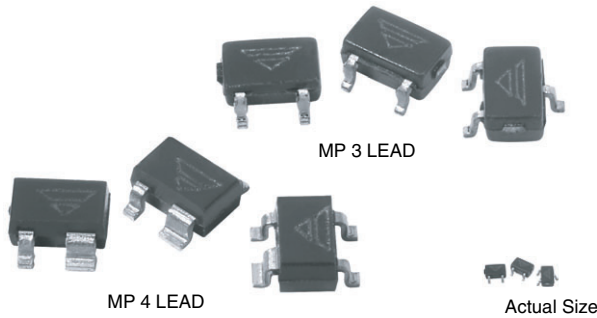
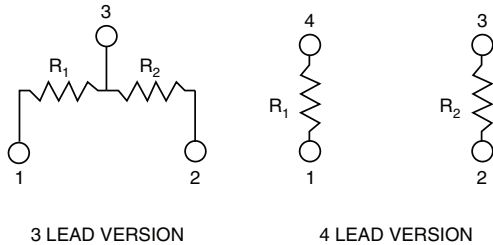


# Molded, SC-70 Thin Film Resistor, Surface Mount Network



Vishay Dale Thin Film MP Series Dividers provide  $\pm 2$  ppm/ $^{\circ}\text{C}$  tracking and a ratio tolerance as tight as  $\pm 0.05\%$ , 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.

## SCHEMATIC



## FEATURES

- Small physical size EIAJ SC70 format
- Tight resistance ratio tolerances  $\pm 0.05\%$
- Low TCR tracking  $\pm 2$  ppm
- Excellent long term ratio stability ( $\Delta R \pm 0.015\%$  at  $70^{\circ}\text{C}$  for 2000 h)
- Center-tapped or isolated matched pair resistors
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## 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

## TYPICAL PERFORMANCE

	ABSOLUTE	TRACKING
TCR	25	2
	ABSOLUTE	RATIO
TOL.	0.1	0.05

## STANDARD RESISTANCE VALUES

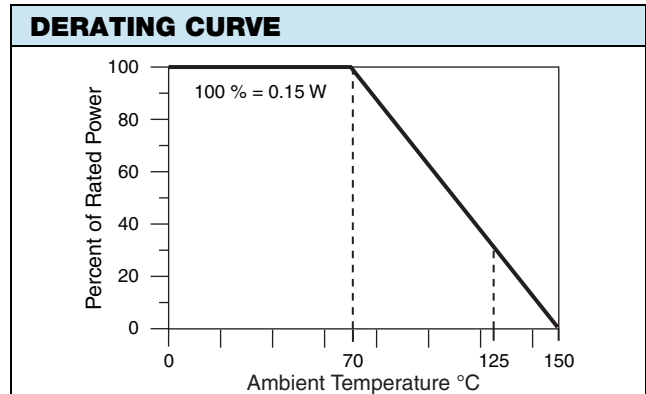
TYPE	STANDARD VALUES	
	$R_1$ ( $\Omega$ )	$R_2$ ( $\Omega$ )
MP3	500	500
	1K	1K
	10K	10K
MP4	1K	1K
	10K	10K
	50K	50K

## STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	3, 4	-
Resistance Range	100 $\Omega$ to 50 k $\Omega$ per resistor	-
TCR: Absolute	$\pm 25$ ppm/ $^{\circ}\text{C}$	$-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
TCR: Tracking	$\pm 2$ ppm/ $^{\circ}\text{C}$ (typical)	$-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
Tolerance: Absolute	$\pm 0.10\%$ to $\pm 1.0\%$	$+25^{\circ}\text{C}$
Tolerance: Ratio	$\pm 0.05\%$ (standard), $\pm 1.0\%$	-
Power Rating: Resistor	0.075 W	Maximum at $+70^{\circ}\text{C}$
Power Rating: Package	0.150 W	Maximum at $+70^{\circ}\text{C}$
Stability: Absolute	$\Delta R \pm 0.05\%$	2000 h at $+70^{\circ}\text{C}$
Stability: Ratio	$\Delta R \pm 0.015\%$	2000 h at $+70^{\circ}\text{C}$
Voltage Coefficient	0.1 ppm/V	-
Working Voltage	100 V max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	$-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	-
Storage Temperature Range	$-55^{\circ}\text{C}$ to $+150^{\circ}\text{C}$	-
Noise	$< -30$ dB	-
Thermal EMF	0.1 $\mu\text{V}/^{\circ}\text{C}$	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01\%$	1 year at $+25^{\circ}\text{C}$
Shelf Life Stability: Ratio	$\Delta R \pm 0.002\%$	1 year at $+25^{\circ}\text{C}$

DIMENSIONS AND IMPRINTING in millimeters			
	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



GLOBAL PART NUMBER INFORMATION														
New Global Part Numbering: MP32001AWS														
M	P	T	4	1	0	0	1	5	0	0	1	B	T	1
GLOBAL MODEL (2 or 3 digits)		LEADS		RESISTANCE (4 or 8 digits)				TOLERANCE AND RATIO TOLERANCE		PACKAGING				
MP (Tin lead)		3		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				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 %		BS = BULK 100 min., 1 mult. WS = WAFFLE 100 min., 1 mult.  TAPE AND REEL T1 = 1000 min., 1000 mult. (1)  <b>Note</b> (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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