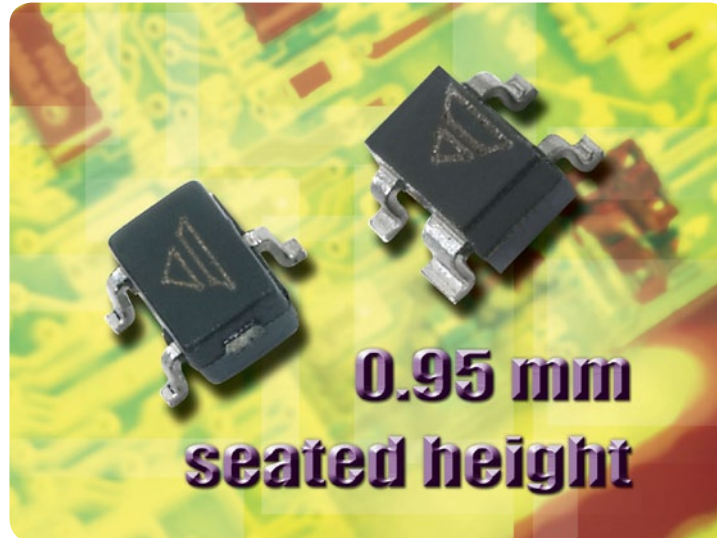


### Precision Thin Film MP Resistor Divider Networks (SC70 Package)



#### KEY BENEFITS

- Small size (SC70 package)
- Tight resistance ratio tolerances:  $\pm 0.05\%$
- Low TC tracking:  $\pm 2$  ppm
- Excellent long-term stability: 500 ppm at 70 °C for 2000 hours
- Schematic center-taped or isolated matched resistors
- 1 : 1 resistance ratio 1 K to 10 K standard offering
- Custom resistance ratios and resistance values available

#### APPLICATIONS

- Instrumentation amplifiers
- Precision voltage dividers
- Measurement bridge circuitry
- Low-noise instrumentation
- Converter applications
- OP amp gain control

#### RESOURCES

- Datasheet: MP Series - <http://www.vishay.com/doc?60092>
- For technical questions contact [thinfilm@vishay.com](mailto:thinfilm@vishay.com)

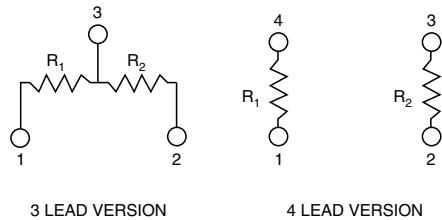


## Precision Thin Film MP Resistor Divider Networks (SC70 Package)



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 SC70 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
- 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 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 $^{\circ}\text{C}$

Revision 20-Oct-11