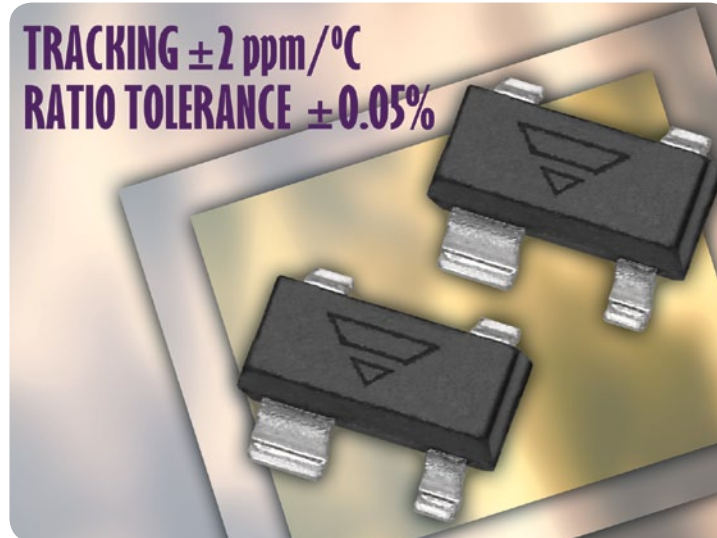


### Isolated Matched Resistor Pair



#### KEY BENEFITS

- 1:1 Resistance ratio 1 K to 100 K standard offering
- Ratio match:  $\pm 0.05\%$
- Ratio tracking:  $\pm 2 \text{ ppm}/^\circ\text{C}$
- Current noise:  $< -30 \text{ dB}$
- Voltage coefficient:  $< 0.1 \text{ ppm}/\text{V}$
- Three resistor series connected customs available
- Custom resistance ratios and resistance values available
- Standard SOT-143 footprint

#### APPLICATIONS

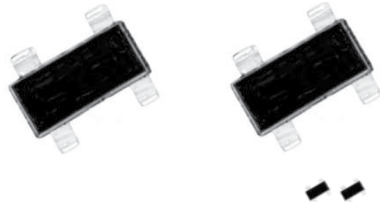
- Instrumentation amplifiers
- Measurement bridges
- Precision voltage dividers
- OP Amp gain control

#### RESOURCES

- Datasheet: MPD/MPDA - <http://www.vishay.com/doc?60016>
- For technical questions contact [thinfilm@vishay.com](mailto:thinfilm@vishay.com)



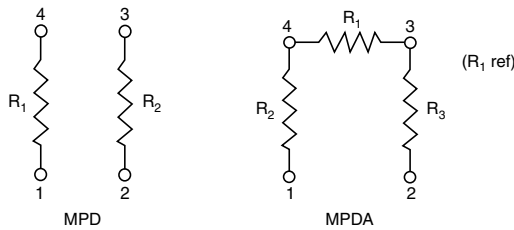
### Isolated Matched Resistor Pair



Actual Size

Vishay Dale Thin Film MPD Series Dividers provide  $\pm 2$  ppm/ $^{\circ}$ C tracking and a ratio tolerance as tight as  $\pm 0.05$  %, small size, and exceptional stability for all surface mount applications. The standard SOT-143 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 convenience, if you require a non-standard ratio, consult the applications engineering group as we may be able to meet your requirements.

#### SCHEMATIC



#### FEATURES

- Tight ratio tolerances to 0.05 %
- $\pm 2$  ppm tracking
- Standard values stocked
- Standard JEDEC TO-253 package
- 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

	Absolute	Tracking
	TCR	25
TOL.	Absolute	Ratio
	0.1	0.05

#### STANDARD VALUES

MODEL	R <sub>1</sub> (Ω)	R <sub>2</sub> (Ω)	R <sub>3</sub> (Ω)
MPD	100K	100K	-
	50K	50K	-
	25K	25K	-
	20K	20K	-
	10K	10K	-
	5K	5K	-
	2K	2K	-
MPDA	1K	1K	-
	10K	10K	10K

#### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	4	-
Resistance Range	1000 Ω to 100 kΩ per resistor	-
TCR: Absolute	$\pm 25$ ppm/ $^{\circ}$ C	-55 $^{\circ}$ C to +125 $^{\circ}$ C
TCR: Tracking	$\pm 2$ ppm/ $^{\circ}$ C (typical)	-55 $^{\circ}$ C to +125 $^{\circ}$ C
Tolerance: Absolute	$\pm 0.1$ % to $\pm 1.0$ %	+25 $^{\circ}$ C
Tolerance: Ratio	$\pm 0.05$ % to $\pm 0.5$ %	+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	< -25 dB	-
Thermal EMF	0.2 $\mu$ 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

#### Note

- Tantalum nitride film is available on special orders