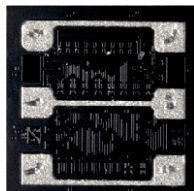


Custom Thin Film Dual Resistor Divider Network



Product may not be to scale

The STR, DTR series of dual resistor dividers provides the user with the option to specify the value, tolerance of each individual resistor and ratio tolerance.

The dual resistor dividers are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The dual resistor dividers are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032 class H or K.

FEATURES

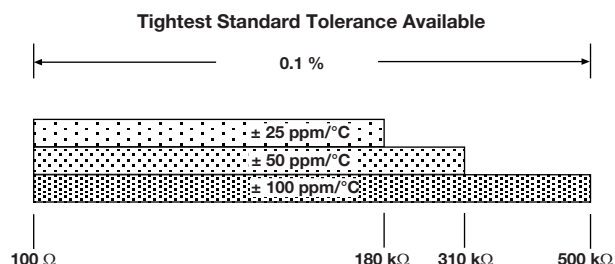
- Wire bondable
- Individual value and tolerance selection
- Ratio tolerance to 0.05 %
- Chip size: 0.030" x 0.030"
- Case: 0303
- Resistance range: 100 Ω to 500 k Ω
- Oxidized silicon substrate for good power dissipation
- Resistor material: Tantalum nitride, self-passivating

APPLICATIONS

Vishay EFI custom-made two resistor chips are designed for hybrid packages requiring close ratio-matching and tracking of two different resistors for gain accuracy and stability. The customized resistance values give the hybrid designer greater flexibility.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

PARAMETER	VALUE	UNIT
Total Resistance Range	100 to 500K	Ω
Standard Tolerances	± 0.1	%
TCR	$\pm 25, \pm 50, \pm 100$	ppm/ $^{\circ}$ C



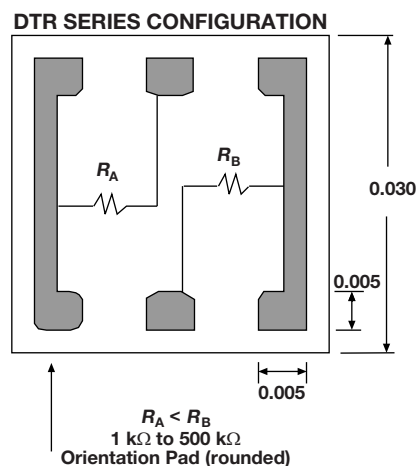
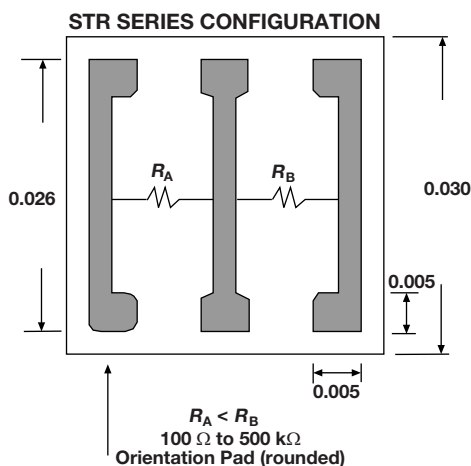
Resistance range refers only to R_A or R_B
Extended value/TCR range available using nichrome version

STANDARD ELECTRICAL SPECIFICATIONS

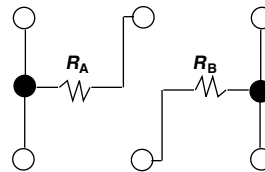
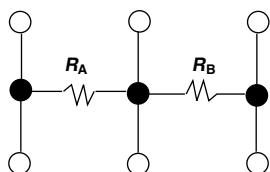
PARAMETER	VALUE	UNIT
TCR Tracking Between Halves (R_A/R_B)	± 10 ($R_A < 1K$) ± 5 ($R_A \geq 1K$)	ppm/ $^{\circ}$ C
Resistance Ratio Tolerance R_A/R_B	Customer specified to 0.05	%
Noise, MIL-STD-202, Method 308 100 Ω to 250 k Ω < 100 Ω or > 251 k Ω	- 35 typ. - 20 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 max. $\Delta R/R$	%
Stability, 1000 h, + 125 $^{\circ}$ C	± 0.2 max. absolute	%
Derated Power	± 0.02 max. ratio	%
Operating Temperature Range	- 55 to + 125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.1 max. $\Delta R/R$	%
High Temperature Exposure, + 150 $^{\circ}$ C, 100 h	± 0.2 max. $\Delta R/R$	%
Dielectric Voltage Breakdown	200	V
Insulation Resistance	10^{12} min.	Ω
Operating Voltage	100	V
DC Power Rating at 70 $^{\circ}$ C (derated to zero at + 175 $^{\circ}$ C)	0.125 each resistor	W
5 x Rated Power Short-Time Overload, + 25 $^{\circ}$ C, 5 s	± 0.1 max. $\Delta R/R$	%



DIMENSIONS in inches



SCHEMATIC



MECHANICAL SPECIFICATIONS

PARAMETER	VALUE
Chip Size	0.030" x 0.030" \pm 0.003" (0.762 mm x 0.762 mm \pm 0.05 mm)
Chip Thickness	0.010" \pm 0.002" (0.254 mm \pm 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO ₂
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.005" x 0.005" (0.127 mm x 0.127 mm) min.
Number of Pads	6
Pad Material	10 kÅ minimum aluminum (Au optional)
Backing	None, lapped semiconductor silicon (Au optional)

GLOBAL PART NUMBER INFORMATION

Global Part Number: STR10031003KCKKSW

Global Part Number Description: STR 100K/100K 10 % RT 0.25 % 100 ppm/°C 10 ppm/°C Std WS

MODEL	RES. 1 VALUE	RES. 1 MULTIPLIER CODE	RES. 2 VALUE	RES. 2 MULTIPLIER CODE	TOL. CODE (%)	RATIO TOL. (%)	TCR (ppm/°C)	TC TRACK (ppm/°C)	SPECIAL	PACKAGING CODE
STR (Divider) DTR (Isolated)	First 3 digits are significant figures of resistance	B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100 3 = 1000	First 3 digits are significant figures of resistance	B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100 3 = 1000	B = 0.1 C = 0.25 D = 0.5 F = 1.0 G = 2.0 J = 5.0 K = 10	B = 0.1 C = 0.25 D = 0.5 F = 1.0 G = 2.0 N = No	E = \pm 25 C = \pm 50 K = \pm 100 M = \pm 250 S = 0/- 100 Z = + 600/- 100	G = \pm 2 J = \pm 5 K = \pm 10 N = No	S = Std	WS = Waffle pack 100 min., 1 mult



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.